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THE MORAL UNITY OF THE HUMAN RACE.

A Sermon

PREACHED AT THE ORDINATION OF
LUTHER HALSEY GULICK, M.D.,
AS A MISSIONARY TO THE
MICRONESIAN ISLANDS.

BY JOSEPH P. THOMPSON,
Pastor of the Broadway Tabernacle Church.

WITH AN APPENDIX ON THE CORAL ISLANDS.

"Declare His praise in the Islands. . . To the Isles afar off
that have not heard His fame."

ISAIAH.

ALSO,

THE CHARGE DELIVERED ON THE SAME OCCASION,

By Rev. SWAN L. POMROY, D.D., Cor. Sec. A. B. C. F. M.

AND

THE RIGHT HAND OF FELLOWSHIP,

AS GIVEN BY

Rev. JOHN D. PARIS, of the Sandwich Islands Mission.

NEW YORK:
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S E R M O N . *

“And I saw another angel fly in the midst of heaven, having the everlasting Gospel to preach to them that dwell on the earth, and to every nation, and kindred, and tongue, and people.”—*Revelation*, xiv. 6.

THE command of Christ, “Go ye into all the world and preach the gospel to every creature,” assumes the MORAL UNITY of all the different races of men. Whatever theory may be adopted of the physical and historical unity of mankind,—whether that of universal derivation from a single pair, or that of separate centers of creation corresponding with the present geographical distribution of the human species,—it is still true that all men have the same moral nature, with the same capacities and wants. We must preach the gospel to every creature, because wherever man is found there is a nature requiring to be renovated, and capable through this agency of being transformed into the likeness of God. For our encouragement in fulfilling this command, the final results of the gospel

* Henry Lobdell, M.D., under appointment from the A. B. C. F. M. to the Assyrian Mission, had also been examined and approved by the Council, but was prevented by sickness from being present at the Ordination Services in the Tabernacle. As the Sermon was prepared partly at his request, the allusions to himself and his mission were retained as belonging to the occasion. Dr. Lobdell was subsequently ordained by a Committee of the Council, at the Church of the Pilgrims, Brooklyn.

are brought to view in the glories of the redeemed in heaven. The song of redemption in the New Jerusalem will be sung by the representatives of "every kindred, and tongue, and people, and nation." The lordly Celt, the agile Arab, the swarthy Copt, the treacherous Malay, the ferocious Kurd, the lofty, warlike Kaffre of the Bechuana, the barbarous Papuan, the brutal Samöeid, the cannibal Alforian, the fierce Algonquin, and the revengeful Iroquois—these all redeemed to God by the blood of Christ, shall sit down with his chosen race—with Abraham, and Isaac, and Jacob, and their seed—and their barbarous tongues, with sweetest harmony, shall join the song of Moses and the Lamb.

"Of a truth I perceive that God is no respecter of persons; but in every nation, he that feareth him and worketh righteousness, is accepted of him." God's commissioned angel, flying in mid heaven with the everlasting gospel, bears his message "to every nation, and kindred, and tongue, and people."

The text suggests as a theme appropriate to a Missionary Ordination, THE UNITY OF MANKIND, ESPECIALLY IN THEIR MORAL NATURE AND CONDITION.

The whole plan of salvation regards the human race as one. The Scriptures teach both the historical and the physical unity of mankind. Moses treats of the human race as the offspring of a single pair created by God in the beginning. Paul declares that "God that made the world, and all things therein . . . hath made of one blood all nations of men to dwell on all the face of the earth, and hath determined the times before appointed, and the bounds of their habitation."

To these declarations of the sacred Scriptures science has nothing to oppose. It is true that some scientific men of distinction—and, in particular, one who has brought to the shrine of an American University the rich fruits of a native sagacity, stimulated by the highest European culture—have questioned whether “mankind constitute physiologically but one species.” These gentlemen find it difficult to account for the varieties among different families of mankind, by any natural causes,—such as migration, climate, nomadic, agricultural, or commercial pursuits,—which have operated since the creation, or rather since the flood; accordingly, they conjecture that mankind, though all pertaining to one genus, had several distinct origins, by separate local creations, corresponding in the main with the geographical distribution of the more prominent races. This is not the place to attempt a refutation of this theory. To notice it is merely incidental to my subject. It may be proper to observe, however, that this theory of a plurality of creations does not appear to have been suggested by any potent or stringent facts, but rather to have been invented for the solution of difficulties which others no less eminent in the science of physiology claim to have solved without it. It is rather an expedient devised for an occasion, than a theory based upon scientific induction.

Great as are the varieties among different races of men, their unities are far greater; and in no respect do they differ from each other as widely as in several respects they all alike differ from the inferior animals.

Prichard, in his elaborate work on the Natural History

of Man, exhibits on the same plate figures of skulls taken at random from "the most dissimilar and widely separated races of mankind,"—as for example, a Kongo Negro, an aboriginal American, and a Chinese of Canton,—in which the resemblance of the heads, both in the front and in the base view, is so striking that one might almost be taken as a *fac simile* of the whole. This would not be true of all skulls taken from these several races; but that it is true of specimens from each class is equally to the purpose. One needs only to glance at the skulls of different races of men figured upon the same plate with the skulls of the Chimpanzee and of the Orang, to see how close are the affinities of mankind with each other, and how remote is the humblest type of man from the most exalted of the inferior animal tribes. While in the human skull, when properly developed, the facial angle ranges from eighty-five degrees, its maximum, down to seventy degrees, its minimum, in the skull of a full grown Orang or Satyr—the creature that approaches nearest to man—it never exceeds from thirty to thirty-five degrees, or less than half the lowest standard of the human skull in any of the tribes of man.* The varieties in the different races of men are far less numerous or striking than in different races of the inferior animals—such as the sheep or dog—belonging to one species or tribe.†

The general observations deduced by Prichard from his survey of the human races, appear to be conclusive as to the physiological unity of mankind. "The different races of men," he observes, "are not distinguished from each other by strongly marked, uniform, and permanent

* See Appendix A.

† See Appendix B.

distinctions, as are the several species belonging to any given tribe of animals. All the diversities which exist are variable, and pass into each other by insensible gradations ; and there is, moreover, scarcely an instance in which the actual transition cannot be proved to have taken place. Thus, if we consider the varieties of figure which are generally looked upon as the most important, and begin with those of the skeleton and the skull as their foundation, we shall find every particular type undergoing deviations and passing into other forms."

"With respect to color," he continues, "it is still more easy to trace the greatest variations within the limits of one race. There is, perhaps, not one great family of nations, having its branches spread through different climates, which does not display in this particular the most strongly marked variations." The black Hindoos of Anu-gangam are "of one identical stock with the yellow-haired and blue-eyed villagers of Jumnotri and Gangotri." The Jews of Northern Europe are fair, those of Portugal are dark, and those of Cochin are black. On the Malabar coast are two colonies of Jews, the one known as "white Jews," and the other perfectly black; yet the Jews nowhere intermarry with strangers. The Arabs, also a separate race, vary in color from the whiteness of the European, through all the shades of yellow and brown, to a deep, glossy black.

Albinos are found not unfrequently in the Negro race. Indeed, this term properly denotes "a white person belonging to a race of blacks." It was originally applied by the Portuguese to the white Negroes on the coast of Africa, of whom a King of Ashantee at one time had

collected nearly one hundred. This peculiarity, which does not seem to be a disease, but merely the absence of coloring matter from the skin, "is probably more common in Africa than elsewhere. Dr. Winterbottom mentions eleven instances among the native tribes about Sierra Leone, and Mr. Jefferson seven among the Negro slaves of America."* The Red Kariens of Tenasserim, and the Red Fulahs of the Gambia, are mentioned by Latham as instances of Asiatic and African tribes with an American color.† The Rajmahali mountaineers, belonging to the *Tamulian* family, have "a Mongolian physiognomy conjoined with a dark skin; broad faces, small eyes, flattish or rather turned-up noses, and lips thicker than those of the inhabitants of the plain,"‡—a sort of Chinese-Negro aspect. Examples such as these have led the eminent anatomist and ethnologist, Dr. Lawrence, to the conclusion that "color is not an essential character of race; that identity of tint is not necessary to establish descent from a common stock. These occurrences, together with numerous examples of the widest deviation in color in animals confessedly of the same species, fully authorize us to conclude that, however striking the contrast may be between the fair European and the ebon African, and however unwilling the former may be to trace up his pedigree to the same ADAM with the latter, this superficial distinction is altogether insufficient to establish diversity of species." §

* Lawrence, "Lectures on the Natural History of Man," Bohn's edition, p. 195.

† Ethnology of the British Colonies.

‡ Eliot, "Asiatic Researches," vol. iv.

§ Lectures, &c., p. 207.

The texture of the human hair likewise exhibits every gradation of variety ; some of the black tribes of Africa having long flowing hair, while some South Sea Islanders of a lighter complexion and a different physiognomy, have the short crisped hair which many suppose peculiar to the African race.*

As respects the average duration of human life, the physical changes to which the human constitution is subject, and all the "great regulations of the animal economy," there is nothing that amounts to a specific difference among the different races of men. "Thus, while mankind, in all its varieties, is distinguished from all other races of animals by differences incomparably greater, more definite, and more important than those which separate the very highest class or species of those animals from the very lowest, the different varieties of mankind are so slightly marked, and so shaded into one another, that their unity is incomparably more prominent than their diversity."† It is remarkable, too, that as science pursues its investigations upon purely physiological grounds, many of the apparent diversities and contrasts among different races disappear, or are distinctly traced to their proximate cause. This fact has led Humboldt to the conclusion that the distribution of mankind is not properly into species originally different, but "only a distribution into *varieties*, which are commonly designated by the somewhat indefinite term, *races*." Physiology itself presents the most weighty reasons in support of the theory of the unity of the human race. Those who maintain a plurality

* Appendix C.

† North American Review, No. clii., p. 172.

of species are at a loss to define them ; and, as has been well observed, even they acknowledge some sort of unity, and employ science “in dividing a unity into parts, instead of performing her higher and proper office of grouping and connecting parts into a whole.”

From these mere physical marks of unity in the human species, we now advance to the *psychological* proofs of the same fact.

A late writer thus classifies the evidences from this source : “By the psychological unity of the race is meant, that all nations and tribes of men possess essentially the same intellectual and moral constitution, differing only in degree and in its stage of development at different times, in different countries, under different circumstances, and among different tribes, families, and individuals ; an intellectual and moral constitution by which, as by an infinite distance or impassable gulf, man is separated from all the other inhabitants of the earth. There is no probable evidence that any species of the lower animals, or even any one individual among them—however remarkable its instincts or great the indications of its intelligence—can apprehend, or be taught to apprehend, an abstract mathematical ratio, or the distinction between right and wrong as an universal ethical law, or the intelligent use of language as based upon and expressing logical generalizations. But there has been found no tribe of men so degraded in organization or habit, that they could not be taught to apprehend all these ; or, indeed, that such an apprehension has not been found already in some degree developed among them. Now, in the possession of this *rational, ethical, and logical* nature all men are one, and

they must always recognise each other as brethren, even though, for the sake of some profoundly scientific distinction, the physiologist should divide them into an indefinite number of species.”*

LANGUAGE—its existence, laws, and affinities—gives a testimony to the unity of the races of mankind hardly less striking than that of physiology. The universality of language among men, the fact that all the races of mankind have some conventional form of speech, while among the inferior animals this is utterly wanting, is itself a weighty argument for the unity of the human species. No tribe of men has ever been found without a language; no tribe has ever been found incapable of communicating with others of the human family by some intelligible conventional signs; indeed, “many of the most uncultivated dialects, as the African and American families, for example, are among the most complex in organization and elaborate in structure;” but no tribe of the inferior animals has ever been found to possess any medium of intercommunication that could properly be termed a language.

Moreover, in human languages there are affinities and radical connexions that indicate the original unity of the race as it is genealogically exhibited in the Scriptures. I cannot here follow the investigations that lead to this result. The Chevalier Bunsen, in his work on Egypt, gives his support to “the hypothesis of the original unity of mankind, and of a common origin of all languages of the globe.” The two Humboldts, William and Alexander, declare their belief in a “community of language,” which, “more than any other attribute of mankind, binds

* North American Review, *ut sup.*

together the whole human race." This opinion is based simply upon philological grounds, and it comes from men who cannot be accused of any superstitious reverence for the Hebrew Scriptures. Alexander Von Humboldt, whose researches in ethnography entitle his opinion to much consideration, expresses his conviction that, "however insulated certain languages may at first appear, however singular their caprices and their idioms, all have an analogy among them, and their numerous relations will be more perceived in proportion as the philosophical history of nations and the study of languages shall be brought to perfection."*

The science of comparative philology is of so recent origin, and so incomplete in its inductions, that its conclusions are not yet to be received with implicit confidence. But the investigations of ethnographers in this department tend more and more to the conclusion that "the language of man was originally one."† The idea that that one was the Hebrew tongue, or that there now exists "some language which contains, as it were, the germ of all the rest, and forms a center whence all others visibly diverge," has indeed been generally discarded; but as the learned Dr. (now Cardinal) Wiseman observes, the fruitless search after the primary language, like the fruitless chase of the philosopher's stone, or for the elixir of life, has led to many important and unexpected discoveries, and valuable results. These results are thus summed up by a writer already quoted: "The general result of the most

* Klaproth, "Asia Polyglotta," quoted by Wiseman.

† Wiseman, "Lectures on Science and Revealed Religion," Vol. i., p. 109. London Edition. 1849.

extended and critical philological researches is, that there is no language, however savage, which is perfectly insulated. Every language belongs to some family, and all the families, as such, are so related to one another by community of words, grammatical analogies, intermediate gradations, and an all-pervading network of tangled affinities, that it is impossible to suppose any portion to have been historically entirely separated from the common stock. It is, moreover, a remarkable fact that the less one knows of languages, the greater their diversities appear; but the more thoroughly they are studied and familiarized, the greater are found and acknowledged to be their similarities and analogies; and the greater the number of languages which one is able intelligently to compare, the more those similarities and analogies branch out, interlock, and intertwine in every direction, until the whole is at length woven into one firm and solid texture. We are, therefore, forced to assume an original unity of human language, of which all existing languages are but branches and off-shoots, or organized fragments; or, perhaps, still better, different forms and stages of development. This essential and primeval unity of language points unequivocally to a genealogical unity of man.”*

The language of the present inhabitants of Assyria, to whom one of the brethren approved by this Council is destined, is allied to the great Indo-European stock; that of the Micronesian Islanders, to whom the other is appointed, is allied, so far as their language is known, to the Indo-Malayan. When, therefore, these brethren shall teach the barbarous tribes to whom they severally

* North American Review, No. clii., p. 179. 1.

go, in their own tongues, the wonderful works of God, it will be no marvel if they shall find in races so widely scattered, marks of affinity, either in the words or in the grammar of their primitive forms of speech—the dialectic differences of Babel grafted upon or sprouting from the original stock of central Asia-Europe.*

I have been betrayed into topics belonging rather to the Chair of the Professor than to the Pulpit, because the intimate relations between science and religion demand that the teachers of religion should not be indifferent to the investigations or even the speculations of men of science, nor pertinaciously set aside a fact of science by a foregone conclusion in morals. The Bible rightly interpreted has nothing to fear from Science fairly established. "Religion has nothing to fear from the legitimate advance of human learning."

But it is time that we should rise from the region of the physical and the merely intellectual sciences to the higher level of moral science, from which we propose to survey the unity of the human species. Enough has been said, I trust, to vindicate the sacred writers from the charge of ignorance or of error in asserting the historical and the physiological unity of mankind. Their *moral* unity is a fact that more nearly concerns us in the work of evangelizing the world. By the moral unity of mankind I intend, their essential and universal likeness to each other in their moral character, in their conduct as social beings, and in their relations to right and wrong, to the law of their Creator, and to the future state.

Such a unity, I have said, is assumed in the command

* See Appendix D.

to evangelize all nations. The text embraces this idea. The proofs of this unity are given in facts familiar to all who have studied the missionary enterprise, and they have a special bearing upon the prosecution of that enterprise, and therefore upon the occasion for which we are now convened. They may be reduced to four general heads, which I will present in their natural order.

I. *All the races of men are alike depraved.*

The observation of missionaries everywhere agrees in this—that the same passions of the human soul are exhibited under every variety of climate and of physical conformation. Lust, anger, jealousy, revenge—every base and hateful passion—has been found in full play in every nation under heaven. The same moral influences are everywhere at work with the same results. The catalogue of vices and crimes that the Apostle in the Epistle to the Romans registered against the polished pagans of his day, has its counterpart in all unchristian nations, polished or rude. Viewed as a moral being, in his essential character, man is everywhere the same. The lawless Kurds, to whose vicinity one of these brethren will go, waylaid an American pastor as he journeyed inoffensively across their territory, and in spite of firmans and passports, but for divine interposition would have massacred him and his party in the passes of the mountains, for the sake of their meager traveling equipments. The Kingsmill Islanders, in whose vicinity the other will locate, massacred an American seaman of the Exploring Expedition, for the sake of his musket and his tobacco; and this in sight of an American war ship, and under the thunder of

its guns. The Kurds endeavored to decoy their meditated victims to a place where murder could be perpetrated with impunity. The Islanders sought by artifice to divide the little company of scientific explorers, that they might cut them in pieces one by one. And yet the Kurds would not violate the rites of hospitality, even when the strangers were in their power ; and the Islanders were gentle and kind to a deserter from an English vessel, who threw himself unarmed upon their protection. This remarkable resemblance in character is not accidental: these tribes, occupying localities so separate and distinct—the one dwelling among the mountain fastnesses of Central Asia, the other upon the coral reefs of the Southern Ocean—exhibit in their moral character the common traits of humanity. However men may vary in the predominance of certain traits, some being fierce and warlike, and others gentle and peaceable, it may be affirmed without contradiction, that among all nations the worst passions of the soul are uniformly displayed when occasion calls them out. Even the dreamy author of “Typee” and “Omoo,” while he is so enamored of the simple savage state of the South Sea Islanders as to wish that it might never be disturbed by civilization and missions—likening it to the innocence and blessedness of Paradise—yet naively informs us of the inveterate hostility between “Typee” and “Happar,” of his own fears of treachery, of his well-grounded suspicions of cannibalism, and of the desperate risks by which he at length achieved his flight. So invariable is the moral character of man, that when a new island or continent is discovered, or an unknown region is explored, if we but know that it is

inhabited by human beings, we know that there also are exhibited in some way the characteristics of depravity common to the race.

Now whence comes this uniformity of moral character ? It is not a mere instinct of the race to do evil—to indulge in anger, jealousy, malice, and revenge ; or to engage in strife, and murder, and war. If it were a mere animal instinct, its universality would fix the identity of the species. There is no fact like this among the phenomena of Natural History. Animals of different species never exhibit such a uniformity of habit. On the low ground of animal instinct, therefore, we must conclude that mankind are one. But this is something higher than instinct : it has a positive and a moral character. We find Reason and Motives operating with respect to the conduct of men as social beings, and with relation to right and wrong. Whence, then, comes this uniformity of moral action in races so widely distributed ? Here we must make one of two suppositions : either the account given in the Scriptures of the creation and fall of man is the true one, or, there has been a plurality of creations, each of which has proved abortive as respects moral character. If depravity were merely a physical thing, the supposition of successive creations of depraved beings to propagate their kind, each in a new region, would be derogatory to the wisdom and benevolence of the Deity. Why continue to produce that which must be uniformly bad ?

But depravity is moral, not physical ; and this only makes it more difficult to reconcile a plurality of species with reason or with the Divine perfections. If all the different tribes of men had as many different original

heads, how comes it that without exception they agree in moral character? This is a thing not of physical constitution, but of moral choice; and the fact that the human species in Asia had fallen, would no more be a reason why a totally distinct species newly created in Africa should fall, than the fact that man has fallen is a reason, or even affords a presumption, that the angels in heaven will fall. We cannot upon rational grounds, reconcile the universal depravity of mankind with diversities in their origin. And how can we reconcile with the Divine perfections the supposition that God brought into being a succession of apostate races, knowing that they would be such—that He created a white man and found him unfaithful, and then created a black man and found him the same, and then created a red man with the same result; and thus continued to experiment upon human nature in different localities, as far as the most fertile ethnologist has carried the division of races. How much more natural, reasonable, and truthful the account of depravity given by Moses, and reiterated by Paul, “By *one* man”—and he the head of the race—“sin entered the world.” How impressive, too, in this view, becomes that grand correlative truth of the Gospel, “As in Adam all die, so in Christ shall all be made alive.” There is no proffer of salvation to any not of Adam’s race. OUT OF ADAM, OUT OF CHRIST.

II. *The universality of CONSCIENCE in mankind argues an identity of species.*

The *affections* of the soul—hope, fear, joy, love, and the like—uniformly exhibited by men in like circum-

stances, go to establish the unity of the human race. These affections, however, are to some extent common to other races of animals: I would, therefore, rest the argument here upon that susceptibility to pleasure or pain in view of moral conduct, which is a universal and distinctive attribute of humanity. The apostle Paul, in the Epistle to the Romans, makes the universal fact of a conscience in man an argument for the universality of the final judgment. "When the Gentiles, which have not the law"—the heathen who are destitute of a revelation—"do by nature"—under the mere guidance of reason and conscience—"the things contained in the law;" when they act upon the principle of the moral law, or carry out any of its precepts, "these, though they have not the revealed law, are a law to themselves. They show the work of the law written in their hearts, their conscience also bearing witness"—this spontaneous moral instinct approving the right and condemning the wrong,—"and their thoughts the meanwhile accusing or else excusing one another,"—their after-thoughts, their reflections argue each case of moral conduct before the tribunal of the judgment, or sitting as jurors, condemn or vindicate each act according to its character; or, it may mean that their thoughts among themselves, their discussions upon points of morals, accuse or palliate their deeds, according to some acknowledged standard of right and wrong.

In all nations, however rude, there are punishments for certain crimes; there is some recognised code of morals; there is some tribunal of justice; nay, the veriest barbarians betray a consciousness of a moral law, even in the cruelties they practice toward barbarians like themselves.

The rudest savage, who snatches his tomahawk and roams the forest for the scalp of his enemy, that he may avenge an injury to himself, his family, or his tribe, shows by that act a capacity to feel and to condemn injustice, though this hinders not his doing the same. Thus even among the wild wanderers of the desert, and in the fierce contests of savage tribes, there is seen what Chalmers calls "the tact of a moral discernment between what is fair and what is injurious in the character of man."

The furtive manner in which savages commit theft or murder, the deception by which they endeavor to conceal the deed, the fear they manifest of detection and punishment—these all betray an inward and ineradicable sense of right and wrong. It has been remarked by missionaries that whenever they deliver to the heathen the moral law embraced in the Ten Commandments, and especially what is called the second table of the law, that treats of the duties of man toward man, they assent without objection to the truth and justice of its requirements, and also that they acknowledge the fidelity of the picture drawn by Paul in the first chapter of Romans, to their own moral character and state. Converts from among the heathen in all nations have borne testimony that before the introduction of Christianity they had a sense of right and wrong, however imperfect, and heard often the voice of conscience within their breasts. The gospel invariably wakes up these susceptibilities, if dormant, and quickens them, if dull.

Now whence this universal conscience, if men be not of one common origin and kind? Any like uniformity

of animal instinct would prove an identity of species : does not this uniformity of mental and moral constitution in all the races of men prove that they constitute but one species ? Observe, this is a very striking peculiarity of the human race : there is no semblance of a conscience in any inferior tribe of animals. The more sagacious animals may be taught that such and such acts are forbidden, and may refrain from them through fear of punishment ; but they do not refer these acts to any ethical code ; they do not look beyond the rod of the master ; they have no innate sense of right and wrong, no perception of moral relations, no consciousness of a moral law ; nor is it possible by any process of education to teach them the principles and distinctions of a code of ethics. But mankind universally have such a code—crude and erroneous it may be—but nevertheless dictated by a moral sense, and capable of being refined upon by the just and searching distinctions of the law of God. The feeling of a man in view of a wrong action is widely different from the feeling of a brute in view of any act of mischief that subjects it to punishment. The man suffers remorse ; the brute a mere sentient fear of bodily pain. The uniformity of this development in man, and its peculiarity, go very far towards establishing an identity of species. There is in man a moral constitution that in various stages of development is common to the human race, and is also distinctive as respects other races of animals. Is not the human race, thus uniformly constituted, ONE ?

III. *The universality of the religious sentiment, and of religious worship among mankind, points to the unity of the human species.*

The religious sentiment is a characteristic of humanity. No animal but man exhibits it ; and no man has yet been found destitute of that sentiment, upon the face of the globe. Under whatever forms that sentiment may be exhibited, in whatever mode and to whatever objects religious worship may be rendered—whether in the gorgeous temples and with the costly sacrifices of India, or by the obscene and horrid rites of Australia ; whether to the spirits of ancestors, as among the Indians of North America and the Malays of Micronesia, or to the rude and repulsive images of the Sandwich Islander, or to the fetish or the devil-symbol of the West African ; however conceived and rendered, worship, as a religious act, is common to all the tribes of men. No nation has yet been found without a religion. In the traveler's narrative of a newly discovered Island or Continent, or of a people newly visited, we look for some mention of religious sentiments and rites, as confidently as for a description of social customs or of personal appearance and habits of life. Indeed, religious sentiments and religious rites often first arrest the attention of a traveler among a strange people, and seem to be interwoven with the whole texture of society. Religion is universal among mankind. There are, moreover, affinities between the different religions of mankind, especially as regards some sacrificial atonement for sin and some conception of a future state, that point strongly, if not conclusively, toward one common historical origin. A priesthood and a sacrifice, under one modifi-

cation or another, are found with great uniformity throughout the world. Some of the islanders of Micronesia have the custom of offering to their gods, which are but deified chiefs, the first-fruits of whatever they possess—a custom singularly analogous to the requirement of Jehovah from Israel. A belief in a future state and in a higher order of beings, is found universally among mankind. The religious faith of all nations takes hold upon an invisible world. A supposed connection with that world has ever given to the prophet and the priest an almost supernatural power over the multitude. Sacerdotal and consecrated orders have everywhere “caused themselves to be revered as the interpreters of destiny, and as mediators between God and men;” vice-gerents of the Deity have appeared “on the banks of the Tiber, of the Bramah Pootra, and of the Arabian gulf.” Piacular offerings in some form, and especially in the form of animal, and even of human sacrifice, are common alike to the Hindoo, the Aztec, and the Australian. The sense of guilt and of the need of expiation, and the immolation of victims to propitiate the gods, are universal phenomena in human history. Shrines, altars, oracles, pilgrimages, sacrifices, are peculiar to no one portion of the human family: Egypt and Greece, Jerusalem and Mecca, the Holy Sepulcher and the Car of Juggernaut, alike testify to the strength and the universality of the religious sentiment in man. The long, low grassy mounds on the banks of the Mississippi—the memorials of a departed race,—the massive monuments of Anahuac, the stupendous pyramids of the Nile, the mummy of the Egyptian, the urn of the Greek, the funeral pile of the

Hindoo, the sacrifice of the living for the dead—the widow for the husband, the servant for the master—in China, in Africa, in Peru, and in the Islands of the sea,—this universality of funereal rites betokens a universal belief in a Future State, which by all its various expressions links the race of man to a common origin and a common destiny.

The religious sentiment is a grand, a uniform, and a distinguishing peculiarity of the human race. The origin of this sentiment is in the very constitution of the mind ; its development is a part of the natural development of man ; it is not an outward habit, but an inward power—deep, all-pervading. It exhibits principles and leads to acts entirely unknown among the lower orders of animals. Are not beings thus mysteriously identified by a spiritual connexion with the Future and the Invisible, beings of one species ? Does not this vital spiritual unity far outweigh all the diversities of form, and color, and condition ?

The argument thus far presented is summed up very forcibly by a distinguished Fellow of the Edinburgh College of Physicians :

“ When we observe that all the races of man, civilized and savage, have the same powers of utterance—that both speak naturally, and are equally understood ; when we find all languages, dialects, and tongues reduced to a few families, and pointing, so far as human wisdom yet can trace, to one common origin ; when we see in all men, whatever the climate they inhabit and the color of their skin, a belief in a world beyond the grave ; when even the poor Bushmen exhibit some glimmerings of

family relations and habits, and some mingling of human sentiments ; when we discover the use of fire, artificial clothing, instruments by which the labors necessary to produce food and raiment are facilitated, and weapons of offense and defense—the club, the spear, the sickle, and the fishing-hook—characteristic of mankind ; when we observe objects of worship, prayer to the gods, sacrifices to obtain real or imaginary blessings—sacred festivities, pilgrimages—the priests and priestesses upon whom the divine services of the Negroes depend, and who are supposed to have confidential intercourse with the gods ; when we find in the most depraved breast some belief in the immortality of the soul and a state of retribution ; when we hear the savage describing his abode beyond the grave as a fertile hunting ground, and the Christian speaking of his paradise as a place the joys of which eye hath not seen, nor the mind of man conceived ; when everywhere are presented funeral rites for the dead—burning, sepulture, embalming mummies ; when we behold mounds without number scattered among all the northern nations of the world, the only remaining records of races now extinct ; when we examine the wonderfully constructed pyramids of Egypt, the graves of the modern Peruvians, the monuments of the Polynesians ; when certain religious observances are considered—it may be the worship of the sun, or the petition of the savage to the Great Spirit, or the prayers, masses, and litanies offered for the dead and for the living, in the churches of Europe and the temples of eastern climes, or the mysterious rites of pagan altars ; and when all these are regarded as phenomena in the history of the most refined and the

most barbarous nations, and as springing from those common faculties and sensibilities of feeling, passion, and hope, which speak of close and unalterable resemblance, and attest the great natural relation of all men to each other, forming a piece of divinity within us—‘something that was before the elements, and owing no homage to the sun ;’ and when, lastly, in the joyful laughter and in those bitter tears which are common alike to the civilized and cultivated citizen of London, and to the untutored savage of the desert, are furnished proofs of family identity, which convince the mind far more powerfully than all the subtilties of argument, for—

‘ One touch of Nature makes the whole world kin,’

we are fully satisfied that all the races of men are, as the gospel clearly expresses it, ‘of one blood ;’ that the BLACK MAN, the RED MAN, and the WHITE MAN are links in one great chain of relationship, and alike children who have descended from ONE COMMON PARENT.”*

IV. *The moral unity of the races of mankind is seen in the fact that the Gospel produces among all nations uniformly the same results.*

The capacity for improvement is one of the most remarkable characteristics of the human species ; and this, like the last mentioned, is a universal characteristic. No race of inferior animals manifests a tendency to elevate itself, or a capacity for essential and permanent elevation

* Dr. J. C. Hall, “An Analytical Synopsis of the Natural History of Man,” prefixed to Bohn’s edition of “The Races of Men,” by Charles Pickering, M.D. The passage, however, is but an elaboration of a similar one in Prichard.

by outward appliances. But there is no race of men that cannot be elevated. This fact is thus eloquently portrayed by Dr. Prichard;—"What greater contrasts," he asks, "can be imagined than those which present themselves when we compare in their actual state the different races of mankind? Let us imagine, for a moment, a stranger from another planet to visit our globe, and to contemplate and compare the manners of its inhabitants, and let him first visit some brilliant spectacle in one of the highly civilized countries of Europe—the coronation of a monarch—the installation of St. Louis on the throne of his ancestors, surrounded by an august assembly of peers and barons, and mitred abbots, and anointed from the cruse of sacred oil brought by an angel to ratify the divine privilege of kings; let the same person be carried into a hamlet in Negro-land, at the hour when the sable race recreate themselves with dancing and barbarous music; let him then be transported to the saline plains over which bald and tawny Mongoles roam, differing but little in hue from the yellow soil of their steppes, brightened by the saffron flowers of the iris and tulip; let him be placed near the solitary den of the Bushman, where the lean and hungry savage crouches in silence like a beast of prey, watching with fixed eyes the birds which enter his pitfall, or the insects and reptiles which chance brings within his grasp; let the traveler be carried into the midst of an Australian forest, where the squalid companions of kangaroos may be seen crawling in procession in imitation of quadrupeds,—can it be supposed that such a person would conclude the various groups of beings whom he had surveyed to be of one nature, one tribe, or

the offspring of the same original stock ? It is much more probable that he would arrive at an opposite conclusion.

“It is only by tracing the history of the diversified human races from ancient times, and by comparing the former with the present state, we are made aware of the great changes which time and circumstances have effected in the condition of particular nations, and are brought to admit the probability of the opinion that beings apparently so different in their whole manner of existence can be in any way allied. It is this inquiry that brings within our observation, in the first instance, one of the great distinctions between the nature of mankind and that of animals. I allude to the uniformity of habits in successive generations which prevails through all the tribes belonging to the lower departments of the living world, and the variations which take place in human races, and their tendency to improve, or to alternate periods of improvement, with reverses and retrograde changes. The Numidian lion and the satyrs of the desert, the monarchies of bees and the republics of African termitas, are precisely to-day what they were in the age of *Æsop* and in the kingdom of *Juba* ; while the descendants of the tribe who are described by *Tacitus* as living in squalid misery in solitary dens, amid the morasses of the *Vistula*, have built *St. Petersburg* and *Moscow* ; and the posterity of cannibals now feed on wheaten bread.”

This capacity for improvement is, therefore, a distinguishing trait of humanity, and its universality goes

far to identify all human races as of one original stock.

But it is emphatically by means of the Gospel that mankind are elevated. The Gospel is strictly moral in its nature, its influence, and its results. It seeks to renew man's moral nature. It finds that nature everywhere the same ; and whenever it exerts its power it produces upon that nature the same effects. Take the Feejee Islander—ferocious, suspicious, treacherous, lapping the blood of his enemies and eating their flesh ; the Dyak, hunting for human heads as an ornament to his dwelling and a symbol of his wealth ; the Alforian, using the skulls of enemies for drinking cups, and as money, wearing their teeth as necklaces, and depositing the head of an enemy in the lap of her whom he would woo to be his bride ; the North American Indian, decking himself with human scalps, and gathering the trophies of war and of the chase for the hunting ground of the Great Spirit ; the squalid, stupid Esquimaux, whose mind is as cold and rayless as the long polar night in which he lives ; the gross and sensual Bushman, now revelling in bestial appetites, now glutting his passions with bloody strifes,—take any and all of these, and bring them under the power of the Gospel, and they are new men in Christ Jesus, with one experience, one character, one life, one hope. The icy Greenlander melts to tears at the story of the Savior's love ; the bloody Africaner becomes gentle and forgiving as the lamb ; the missionary at the Feejee Islands looks out upon the school, the church, the well-tilled garden, the peaceable and civilized community, from windows that more than once were closed to shut out the horrid stench of a can-

nibal feast. He who commanded us to go into all the world and preach the Gospel to every creature, knew that by nature man was everywhere the same; and that by grace he might everywhere become the same. The angel of the Gospel is commissioned to every nation, and kindred, and tongue, and people, because that Gospel will transform all into the same blessed likeness of Christ, and unite them to the glorious kindred of heaven.

Let one fact more suffice. A little more than seventy years ago an enterprising navigator discovered in the South Pacific a group of islands inhabited by rude and barbarous tribes of idolaters. Himself at first an object of their superstitious fear, he fell at last a victim to their fierce revenge. For more than forty years the intercourse of civilized nations with those islanders served only to introduce new vices among them, and to help forward their annihilation. Thirty-one years ago the first band of missionaries went from this country to those islands; in the year 1827, a reinforcement was sent to this mission, of which the Rev. P. J. Gulick was a member. This evening a son of that missionary, born in the Sandwich Islands, but educated principally in the United States, is to receive ordination as a missionary to another group of islands lying beyond, whither he is to be attended by native helpers from the Sandwich Islands, to be supported in whole or in part by the Sandwich Island churches. In view of such results within the life of one generation, who can doubt that this our brother will witness in the Caroline Islands and throughout all Micronesia, where as yet the gospel has not been preached, results like those that he has seen from infancy in his

native islands, once dark and barbarous, now civilized, Christianized, and recognised as a member of the great family of nations? Away with all distinctions of race, when the Gospel comes with its transforming power.

The view now presented *imparts unity and dignity to the work of missions*. As Christ's work this is every where the same; but it is the same also as related to man. Even the sceptical Humboldt could say that the investigation of the possibility of one common descent of mankind imparted to the closing pages of his great work—the *Cosmos*—"a nobler and more purely human interest." How much more noble the interest pertaining to this subject in a Christian view! We are all of one race—partakers of a common depravity, and heirs through grace of a common redemption. In sending the Gospel to any nation, we are sending it to brethren of the human family who may also become brethren in Christ Jesus. The work is everywhere the same—the same subjects, the same instrumentalities, and the same blessed results. The brethren this evening to be ordained will go to fields widely dissimilar—as opposite in their history and in some leading characteristics as can well be conceived. Yet they will not go to different planets, nor to beings of different species; they go to men—men of like passions with ourselves, men having the same nature, capable of the same transformation, and of the same exalted destiny. As I contemplate upon the map their several fields—the one near the cradle of the human family—the other upon islands that were peopled only by the overflowing of the continents, and some of which may have peered above the

ocean since Abraham was called—as I see thus the old and the new, the known and the unknown embraced in the comprehensive reach of the Missionary Enterprise, I seem to see with these bodily eyes what John saw in his wondrous dream—a white robed angel with his silver trumpet flying in the midst of heaven and proclaiming the everlasting Gospel to them that dwell on the earth—even
TO EVERY NATION, AND KINDRED, AND TONGUE, AND PEOPLE.

No finer illustration of my theme could be furnished than that given by the fields to which these brethren are respectively designated. Our brother LOBDELL goes to join a new mission on the plains of Assyria. The center of his labors will be at Mosul, near the site of the ancient Nineveh; amid the ruins of a greatness that had perished when Rome was in its infancy, and the memorials of a civilization that was already fading when Greece began to dazzle the world; palaces built before Jerusalem had a king; idols worshiped before Abraham had left the plains of Mamre; sepulchers already covered with the mold of centuries when Christ appeared in Judea. In the ancient seat of civilization and empire, upon the grave of proud and guilty Babylon, where Ninus and Semiramis reigned in fabled splendor, and Beltshazzar reveled with the sacred vessels of Israel's God—even there will he plant the banner of Christ and call his chosen to the supper of the Lord. He will preach the Gospel where Jonah lifted up his voice, and where his sepulcher remaineth to this day; he will worship where Abraham worshiped; he will sing songs of victory by the rivers of Babel where captive Israel wept and chanted her lamentations. He goes to find

there a degenerate race—to read the truth of the Old Testament in prophecies fulfilled before his eyes—but still to find there men partakers of our common humanity, and capable of the same salvation in which we trust, and to read the promise of the New Testament in glowing fruition. He goes there with a nobler aim and with a holier zeal than one who goes to burrow in the mounds of ancient cities and to exhume the Past. He will erect no monuments of brutal power, no gorgeous piles of regal magnificence, but monuments of useful arts, of beneficent labor, of Science and Religion made tributary to human happiness—monuments not to be hereafter exhumed to the wondering gaze of the lone antiquary, but to stand for the grateful admiration of all coming Time. He shall be called “the Repairer of the breach—the Restorer of paths to dwell in.”

Our brother GULICK goes to a people scarcely known to the ethnologist. They dwell upon the innumerable coral reefs far to the South and West of his native Sandwich Islands; a people of mixed races—yellow, brown, and black—but chiefly of the promising Malay, of a medium stature, light color, features bold, nose aquiline, forehead and cheek bones high, hair black and straight or slightly curled, a kind, benevolent, social, commercial, peaceable, modest, honest, truthful, considerate, and reflective people—though mixed with races of a fiercer mold—a people who understand the art of navigating by the stars, and are given to maritime pursuits, a people in whom the moral and intellectual traits predominate over the physical, and who have these two grand traits of national honor, that they reverence their ancestors and

respect their women. Marriage is sacred, and though there be no conventions for woman's rights, and no contentions about equality of dress, where all, alas, are too near the primitive standard, yet a neglect or a wrong done to a wife is resented by her sex in a castigation of the offender, from which no wealth, nor rank, nor power can save him. And yet withal our brother will there find proofs of depravity—serfdom, caste, and other grievous wrongs; he will find also the religious sentiment there developed—not in idolatry, gross or refined,—but in the worship of the spirits of ancestors, by prayer and simple ceremonies, the offering of food and the planting of cocoa-nut trees about their graves. In some islands he will find an influential priesthood—a priest for every family; in others no temple, image, or sacrifice.

He will find, too, massive ruins of which the present islanders can give no account; some traces of the art of writing; much complexity in government and the constitution of society; skill in the arts of weaving and of dyeing, and in general a knowledge of the sciences in advance of their personal comforts; facts which indicate the deterioration of the present islanders from some higher state. Whence came this people, now for the first time to be made acquainted with the Gospel? Were they created there upon those little islands a separate race? Incredible. Their physiology, their language, their customs, their moral character and aptitudes, all bind them to the family of man. Says Dr. Latham, of the highest authority in all matters of ethnology, “with the exception of the Mauritius, the isle of Bourbon, Ceylon, the Seychelles, the Maldives, and the Laccadives in the

Indian ocean, and the Japanese empire with the islands to the north thereof, in the Chinese sea, *every inhabited spot of land in the Indian and Pacific Oceans is inhabited by tribes of one and the same race.*"* The point of contact of that race with the main land is the peninsula of Malacca on the continent of Asia.

To show the possible migration of these tribes, I would mention the well-attested fact that a native of these same Caroline Islands was found upon a strange island fifteen hundred miles due east, whither he had been wafted in his own canoe. And as Lathan observes, "the ocean is the highway between tribe and tribe, or nation and nation, just in proportion as there is the skill, the experience, the courage, and the necessary equipment for using it. The desert, the prairie, or the ocean, are boundaries that limit or paths that extend the diffusion of tribes and nations, just in proportion as there is the camel, the horse, or the ship to make them available."†

The same writer traces to India the partial civilization of the Javanese, of the people of Bali, and of other islanders in that archipelago. This Indian civilization, however, has given way to a distinctive Malay influence, which has diffused itself throughout the ocean world. He says, "I feel as satisfied that Australia was peopled from either Timor or Rotti, as I do about the Gallic origin of the ancient Britons." After describing the aboriginal inhabitants of the vicinity of Singapore, he remarks,—“their priest or physician is called *bomo*, and he invokes the *hantu*, or deities, the *unito* of the Philippine islanders, the *tii* of the Tahitians, and probably the *Wandong*

* Varieties of Man, p. 130.

† Varieties of Man, p. 129.

and *Vintana* of Australia and Madagascar respectively.”* Such affinities of language and of customs may be extensively traced throughout Oceanica, and will doubtless be multiplied as the facilities for observation increase. The migration of these island tribes has been from west to east.†

The newly-ordained missionaries will traverse the globe in opposite directions—the one by the Mediterranean and the Black Sea, the other by the Pacific ; but on the other side of the world, upon meridians not very remote, they will encounter men of one species, with ourselves, and whose earliest ancestors may have dwelt in Asia-Europe. Our brother GULICK goes to lay foundations, to build where never man has built. At times the work may seem too vast and difficult for a few weak-handed men toiling alone. But the very works of God in that island world must rebuke all impatience or distrust. Those fair tropic isles, now verdant with the bread-tree and the cocoa, have been reared through long ages by tiny insects innumerable, the microscopic builders and tenants of the coral rocks. Their minute deposits—the accumulation of ages—not only exhibit forms of beauty unrivalled in the vegetable world, but present barriers of strength that a navy may not override. Yet by no such slow accretions does Christ’s kingdom grow. Our brother may there see fashioned to his hand specimens of moral beauty that the Lord shall choose for his great cabinet of grace ; he may see reared bulwarks of salvation and gates of praise, where all is moral desolation. But what matters it if he only lay foundations ? Though

* Ethnology of the British Colonies, pp. 209, 215.

† Hale, Supplementary Volume to the U. S. Exploring Expedition. See App. E.

he feel himself to be but an atom—a microscopic unit in the moral universe—yet laboring in God's plan he shall do a work that will endure when the rocks have crumbled to their primeval elements—that shall stand in that dread presence from which every island shall flee away.

Nor will we who tarry here forget the lesson of those insect rocks; we especially of this church,* who give to this brother the right hand of fellowship, as at the first missionary meeting the church at Antioch gave to Paul and Barnabas the right hand of fellowship, that they should go to the Gentiles. Our prayers and alms, though they be but as microscopic mites in the great sea of human wickedness, shall be deposited surely and steadily, till many a lagoon, reefed round with coral groves and tropic verdure, shall give safe harbor to the tempest-driven soul.

I cannot close without adverting in one word, to the fact that both these brethren are thoroughly qualified physicians. As Christ sent forth the seventy with power to heal diseases, thus giving them the readiest access to sinning, suffering humanity, so are they sent forth with all the equipments that human skill can furnish for reaching by acts of beneficence the apostate mind of man. A little case of medicines will often secure for the traveler among barbarians a degree of reverence that a brace of pistols would not inspire. The medicine-man bears everywhere a charmed life. I doubt not that a medical missionary, when once his character was known, would be safe among any people under heaven. And how enlarged the sphere of such a man! Instead of being a mere

* Mr. Gulick was a Member of the Broadway Tabernacle Church.

auxiliary to a missionary station, he becomes rather its strength and stay. Would that young physicians of Christian principle, who now are pining in their unfrequented offices waiting till they shall be grey enough to have a call, would regard the universal call of Providence, and go forth to heal and save the lost.

Go, brethren, in your favored work. Fly as with angel-wings to preach the everlasting Gospel. We meet again in an assembly where all diversities of nation and of language shall be lost ; where the pale Caucasian, the tawny Indian, the tattooed Islander, and the sable Negro, shall sit down together in their Father's house. I charge this congregation, I charge my own soul, to be there with trophies of redeeming grace. I charge you, brethren, to bring thither such trophies from your distant climes. Let no tribe, however remote, be unrepresented in that great and blessed family. Let no tongue, however barbarous, be unheard in the grand unison of that new and everlasting song, THOU, O CHRIST, ART WORTHY ; THOU, O CHRIST, ART WORTHY ; FOR THOU WAST SLAIN, AND HAST REDEEMED US TO GOD BY THY BLOOD, OUT OF EVERY KINDRED, AND TONGUE, AND PEOPLE, AND NATION.

CHARGE AND INSTRUCTIONS

TO

L. H. GULICK, M.D.,

BY

REV. S. L. POMROY, D.D., COR. SEC. A.B.C.F.M.

MY DEAR BROTHER :

You have been designated to a part of the world which no herald of mercy has ever visited, and respecting which comparatively little is known to civilized and Christian nations. Before proceeding therefore to give you the charge with which I have been intrusted by the council here convened, it is deemed proper to make some general statements regarding the field of your future labors.

The region usually termed "Oceanica" is bounded on the west by the shores of the Asiatic continent and the line which separates the Indian Ocean from the Pacific; on the east by the American continent; omitting, however, those islands which lie near the coasts of both continents. It extends north as far as the fortieth and south as far as the fiftieth parallel of latitude.

It has been fitly termed “ *The Island World*.” In the beauty, and grandeur, and variety of its natural scenery ; in the salubrity of its climate ; in the richness and abundance of its commercial resources, it is certainly unsurpassed by any other section of the earth. This vast region has been divided, particularly by French geographers, into five grand departments, which are called Malaisia, Australia, Melanesia, Polynesia, and Micronesia.

Malaisia includes Sumatra, Java, Borneo, Celebes, the Philippines, Moluccas, and in general the islands in which the Malays are predominant, or at least prominent.

Australia comprises the continent or island of New Holland (for it is undetermined to which class it belongs) and Van Diemen’s Land.

Melanesia embraces New Guinea or Papua, New Britain, Solomon Islands, New Hebrides, New Caledonia, Feejee Islands, and some others.

Polynesia includes all that part of Oceanica which lies east of the Feejees, taking in New Zealand on the south and the Sandwich Islands on the north, as well as the numerous groups which lie between them, such as the Friendly, Navigators’, Society Islands, Gambier’s, Marquesas, and others.

Micronesia comprises several groups of islands lying north of Melanesia, east of Malaisia, and west of Polynesia, extending through about forty degrees of longitude and twenty degrees of latitude, almost the whole of it being north of the equator. The principal groups in this division are the Pelew, Ladrone, Caroline, Ralich and Radick Islands, Mulgraves and Kingsmill. The islands are very numerous, but not large. The name

Micronesia signifies "the region of small islands;" Polynesia "many islands;" Melanesia, "Black islands;" Malaisia, "the Malay islands."

Of the eleven different races into which the human family are divided, four at least are found in the regions of Oceanica; viz. the Australian, in Australia, estimated at 500,000; the Papuan, in Melanesia, sometimes called oceanic negroes, estimated at 3,000,000; the Negrillo, found in the interior mountains of New Guinea, New Hebrides, the Philippine Islands, and some others, also black, with a strong aversion to the sea, estimated at 3,000,000; and the Malayan race, to which the inhabitants of Malaisia, Polynesia, and Micronesia belong. In point of numbers this race holds the third rank among the eleven; the first being the Arab, or white race, estimated at 350,000,000; the second, the Mongolian, at 300,000,000; the third, the Malayan, at 120,000,000.

The great Malayan race are in general of a dusky brown or dark copper color, with a faint tinge of yellow. The hair is thick, strong, black, with a slight tendency to curl. In physical endowments they are superior to most other races. In disposition they are characterized by a general gaiety and good humor, a desire to please, and a willingness to be amused, quite in contrast with the cold gravity of the North American Indian. To this may be added extreme fickleness in their passions and purposes, susceptibility to new impressions, and a readiness to adopt new customs and new modes of thinking. They possess, moreover, such an extreme fondness for the sea as will almost warrant the application of the epithet amphibious, though it is quite otherwise with their neighbors

of the Papuan, Negrillo, and Australian races. They are remarkable also for enterprise and bold adventure—a race of navigators, often making long voyages in vessels in which our sailors would hesitate to cross a harbor.

They are a people of good intellectual endowments. No savages have ever shown a greater capacity or a stronger disposition for improvement. On the other side of the account, you may set down gross licentiousness, weakness of the domestic affections, lying, hypocrisy, theft, cupidity, and many other vices common to all the dark places of the earth.

With these remarks respecting the Malayan race in general, we will turn our attention more particularly to that part of the island world where you and your associates expect to labor.

The Micronesians, as before remarked, are of the same race with their neighbors, the Polynesians, and are like them in complexion, features, physical structure, language, customs, and general characteristics. There are, however, some diversities in the different groups of the region. The more southern islands have evidently received some accessions, and some modifications of complexion and character, from the Melanesians on their southern border, while the western section has clearly been reached by influences from the Asiatic continent.

They are social and enterprising. A constant intercommunication is kept up by the inhabitants of the different groups and islands, a circumstance highly favorable to the spread of the Gospel among them. In their voyages, it is said, they govern their courses by the stars with great

accuracy. They divide the horizon into twenty-eight points, giving to each a name.

Their skill in some of the arts is considerable. Their canoes, which sail either way with equal facility, are covered with a varnish of native manufacture, which renders them water-tight. The girdles or sashes which they wear are made of the filaments of the banana plant, not braided as in other parts of the Pacific, but woven in a simple loom, the shuttle being much like that in use among us.

In regard to general character, all navigators who have visited them are strikingly agreed. Kotzebue, Duperrey, D'Urville, Lütke, Martens, Wilson, and the United States' Exploring Expedition, all testify that their most striking trait is a certain native kindness of heart, sweetness of natural temper, and an absence of harsh and violent feelings, very rarely to be found among men in the savage state. They are distinguished also from the other inhabitants of Oceanica by the unusual consideration awarded to the gentler sex, as well as by the degree of purity and honesty which are said to prevail among them. They are described as intelligent, considerate, acute in reasoning, and curious to understand the meaning of any novel appearance. It is the opinion of some that they have descended to their present condition from a higher level of civilization once enjoyed by their forefathers, and some traces of which, it is thought, are still visible. Wars are not frequent among them; and when they do engage in them, they give due notice to their enemies that they are coming.

Their religion is said to consist mainly in the worship

of the spirits of their ancestors, which fact shows that at some former period they have had a connexion with eastern Asia. They pray and perform certain ceremonies, and among these offer a portion of their food to the spirits ; but they have neither temples, images, nor sacrifices. It does not appear that the tabu system which once prevailed at the Sandwich Islands, has any existence among them. It is certain there is nothing of the kind in that part of Micronesia which bears the name of the Kingsmill group.

These facts have been gathered from various sources, English, French, German, Russian, but more especially from the interesting and truly scientific works prepared by gentlemen connected with the United States' Exploring Expedition under Lieut. Wilkes. Some things also have been gleaned from periodical papers published at the Sandwich Islands. Of the probable population of Micronesia no estimate has been made by navigators, though many of the islands are said to be thickly peopled.

The result of all our researches is, that Micronesia promises to be an open and an exceedingly interesting field of missionary labor. Some of the inhabitants have heard of the changes wrought at the Hawaiian Islands, and have earnestly entreated that missionaries might be sent to them also.

There is a general understanding with the London and other English missionary societies, that the islands of the Pacific, south of the equator, are to be occupied by them, and those north of the equator, by missionaries from this country.

The line of steamers which will no doubt soon be

established between our western coast and the eastern coast of Asia, and for which some provision has already been made by our Government in its recent treaty with the Sandwich Islands, will pass through Micronesia, and thus open a regular channel of communication with Honolulu and this country.

The object of this mission may be regarded, perhaps, as two-fold: First, to give the Gospel to those benighted and yet beautiful islands of the sea, that their inhabitants, through its instrumentality, may be fitted for the kingdom of heaven. This of course is the primary object. The second is to provide the additional moral stimulus necessary to promote the spiritual welfare of the Sandwich Island churches, develop their energies, and bring them up to that true self-supporting elevation, where they will not only need no further aid from this country, but will become the instruments of extending the blessed work, so happily begun among themselves, to their brethren in the regions beyond them.

This mission is to be a branch of the Sandwich Islands mission, and will be composed partly of American and partly of Hawaiian christians, chiefly of the latter, both males and females. The Hawaiian missionaries, it is expected, will be sustained wholly by their own churches. Other missionaries who may accompany them will derive their support from the same source, so far as may be found practicable.

A society, with this object in view, has recently been formed at the Islands, auxiliary to the American Board. To this will be entrusted, for the most part, such preliminary measures as may be requisite to the establishment

of the mission. The first step will be an exploration of the field, under special instructions sent to the Sandwich Islands Mission, who will probably dispatch some of their number for this purpose.

Micronesia consists in part of low, flat, coral islands, from one to five or six feet above the ocean, and in part of high, mountainous, volcanic islands. The latter, it is probable, will be first occupied by the contemplated mission, and the former, at a subsequent period, perhaps by Hawaiian missionaries, acting under the superintendence of their American brethren. It is thought also that a small missionary vessel will be called for in the progress of the work, which, perhaps, the mission itself, with native aid, may be able to construct.

We have thus given you, my dear brother, such facts as we could respecting that island region to which you are bound. It would not be strange if, on a closer inspection by yourself and your associates, the descriptions given by transient visitors should be found to be somewhat too favorably drawn. Distance and dimness often lend enchantment. There can be no doubt, however, that you will find there a people who need the gospel, and who have been endowed by their Creator whom they know not, with many interesting and amiable natural qualities. We believe that the day of their redemption draweth nigh.

It only remains to deliver to you, in behalf of the council here convened, their solemn charge respecting the duties of the office into which you have this evening been inducted.

You are now, my brother, a minister of the Gospel, an ambassador of Christ, ordained, commissioned, and fully empowered to explain the messages of divine mercy, to administer the ordinances of Baptism and the Lord's Supper, to exercise the rights and discharge the functions which pertain to the office of the Christian ministry. "The office of a bishop" is declared by an apostle "to be a good work." It is indeed a good work, a great work, a difficult work, a very responsible work, and withal a most blessed work. I cannot help thinking that many a burning seraph before the throne would be happy to stand in your place to-night, and have before him the prospect and the privilege of publishing salvation to a dying world. It has pleased the great Head of the Church, however, to entrust this work to sinful men, who know the bitterness of sin, and who have fled for refuge to that Saviour whom they preach. They can recommend him as no angel could. This is your high privilege. What we have to say to you, then, is this: Remember always and everywhere what you are, and *act in character*. Study to obtain distinct, consistent, and enlarged apprehensions of Divine Truth as revealed in the Scriptures, and to acquire the art of impressing it on others. Keep your own soul in constant communication with the Father of Lights. Endeavor to drink in largely the Spirit of Christ, his meekness, patience, self-denial, and persevering love to man. Be diligent, laborious, faithful, untiring. Make full proof of your ministry.

You have now been set apart as a Missionary of the Cross, and are destined to a dark region, where Christ has not been named. Difficulties, discouragements, trials,

are before you. With help from above, make up your mind to meet them like a man of God and a true minister of him who pleased not himself. Honor your profession, the gospel you preach, the Master you serve. Never give your brethren and friends, and the churches of this land, occasion to regret that they have sent you forth on this great and blessed enterprise. Settle it in your heart that you have enlisted for life, and that if the will of God be so, you will lie down to your last sleep among the people for whose salvation you are to labor. These things we give you in charge before God and the Lord Jesus Christ, who shall judge the quick and the dead at his appearing and his kingdom.

Early in the month of November you are expected to sail with your associates for the Sandwich Islands, which to you have the charm of birth-place and of home. There you will remain till the requisite preparations have been completed, and thence take your departure for the scene of your labors, bearing the inestimable treasures of salvation to the perishing inhabitants of the isles. And when we shall meet you again in the presence of the Lord of Life and Glory, may we see you encompassed with a great company of redeemed souls, gathered through your instrumentality into the garner of Heaven.

THE
RIGHT HAND OF FELLOWSHIP,
BY
REV. J. D. PARIS,
OF THE SANDWICH ISLANDS MISSION.

[It is due to Mr. Paris to state that the following is only a sketch of his excellent address, prepared by others from memory.]

MY YOUNG BROTHER :

I have come fifteen thousand miles to give you this evening the right hand of fellowship as a minister of the Gospel.

I welcome you in the name and behalf of the Fathers and Brethren of this council, by whom you are ordained. I welcome you to a participation in the glorious work of preaching the gospel of Christ. It is not a work of ease or luxury. It is a work of toil, and self-denial, and responsibility. But it is a glorious work, and one we would not exchange for any other. When all the relations of life are broken up—when the works of philosophers, and statesmen, and poets are consumed—the sublimest and most durable specimens of art annihilated—the world and all things in it burnt up,—our work will

remain. It is written upon that which is imperishable—written as with a diamond point on the tablet of the soul, which is immortal as its Maker.

Again I give you my hand in behalf of the Fathers and Brethren of the Sandwich Islands Mission. To me this is a meeting of no ordinary interest. “*Ua pomaikai kana i keia halawai ana*—This is a happy meeting for us two.” A thousand associations, tender and sacred, link you to the Sandwich Islands. You are drawn to them by the bands of nativity, and by the remembrances of childhood and early youth, and you are soon to return to them. Your parents and brothers there await your arrival—you are returning to your father’s house. I heartily greet you as the first son of the Sandwich Islands Missions who shall have returned to their shores ordained to the Gospel ministry. I welcome you to a participation in the labors, joys, responsibilities, and cares of the missionary. I most heartily welcome you to a participation in preaching the unsearchable riches of Christ to the heathen world. It is a difficult work, requiring the most steady purpose of soul and the most fortified will. It is a work of long continuance. Lengthened nights of toil may precede the day-spring. But it is a glorious work, my brother! It is a good work! May the Lord’s blessing attend you in your missionary life! May the work of the Lord prosper in your hands, and the islands remote which still sit in darkness, see great light!

And now again I welcome you in anticipation of the time when we shall on Hawaiian shores extend to you the hand of assured fellowship, as you leave us for your

more distant field. Our prayers shall follow you, and our fellow feeling, and may God's blessing accompany you, and by assistance of divine grace may you remain faithful to all responsibilities assumed! I welcome you, my brother! *Welcome!*—WELCOME!

APPENDIX.



[A.—P. 6. THE FACIAL ANGLE.]

THE *facial angle*—as it was called by Camper, who originated this method of comparing the heads of different races—is ascertained by the following simple method:—“The skull is viewed in profile, and first a line is drawn from the entrance of the ear to the base of the nostrils; then a second, from the most prominent point of the forehead to the extreme border of the upper jaw, where the teeth are rooted. It is evident that an angle will be formed at the intersection of these two lines, and the measure of that angle, or, in other words, the inclination of the line from the brow to the jaw, gives what is called the facial line, and forms in Camper’s system the specific characteristic of the human family.” A rough measurement of the angle may be made by taking a jointed rule, to which is attached an arc of a circle divided into degrees, and adjusting one limb of it to a line drawn from the extremity of the upper jaw to the protuberance of the forehead, and the other to a line drawn from the same point of the jaw to the external opening of the ear; the angle made at the joint and described on the arc will be the facial angle. It determines the extent to which the forehead retreats; “sloping backwards from the root of the nose in some cases, and in others rising perpendicularly above the face.”

This mode of measurement is based upon the common idea, that the protuberance of the lower part of the face indicates a preponderance of the animal over the intellectual, of eating over thinking, and that the protuberance of the forehead indicates the reverse. As a general thing, this is no doubt true; but it does not admit of a strict scientific application. “A well-developed skull and forehead, and an expanded intellect, have been regarded as co-existents in every age: a forehead ‘villanous low’ is Shakspeare’s expression with reference to the Ape.”

Dr. Lawrence, to whose admirable work I have had frequent occasion to refer, makes the following happy presentation of this point:*

“In man only is the face placed perpendicularly under the front of the cranium; so that the facial line is perpendicular: hence the angle formed between this line and the horizontal one above described is most open, or approaches most nearly to a right angle in the human subject. The face of animals is placed in front of the cranium instead of under it: that cavity is so diminished in size, that its anterior expanded portion or forehead is soon lost, as we recede from man. Hence the facial line is oblique, and the facial angle is acute; and it becomes more and more so as we descend in the scale from man: in several birds, most reptiles and fishes, it is lost altogether, as the cranium and face are completely on a level, and form parts of one horizontal line.

* Lectures on Physiology, &c., pp. 116-119.

"The idea of stupidity is associated, even by the vulgar, with the elongation of the snout, which necessarily lowers the facial line, or renders it more oblique: hence the crane and snipe have become proverbial. On the contrary, when the facial line is elevated by any cause, which does not increase the capacity of the cranium, as in the elephant and owl, by the cells which separate the two tables, the animal acquires a particular air of intelligence, and gains the credit of qualities which he does not in reality possess. Hence the latter animal has been selected as the emblem of the goddess of wisdom; and the former is distinguished in the Malay language by a name which indicates an opinion that he participates with man in his most distinguishing characteristic, the possession of reason.

"The invaluable remains of Grecian art show that the ancients were well acquainted with these circumstances. They were aware that an elevated facial line, produced by a great development of the instrument of knowledge and reflection, and a corresponding contraction of the mouth, jaws, tongue, nose, indicated a noble and generous nature. Hence they have extended the facial angle to 90° in the representation of legislators, sages, poets, and others, on whom they wished to bestow the most august character. In the statues of their heroes and gods they have still further exaggerated the human and reduced the animal characteristics, extending the forehead over the face, so as to push the facial line beyond the perpendicular, and to make the angle 100° .

"The human and the brute face are not more strongly contrasted in size, and in their relation to the cranium, than in general configuration, in the construction of individual parts, the motions and uses to which they are subservient. The latter is merely an instrument adapted to procure and prepare food, and often a weapon of offense and defense; the former is an organ of expression, an outward index of what passes in the busy world within. The elongated and narrow jaws with these muscles, with their sharp cutting teeth, or strong pointed and formidable fangs, principally compose the face of the animal: the chin, lips, cheeks, eyebrows, and forehead, are either removed, or reduced to a size and form simply necessary for animal purposes. The nose is confounded with the upper jaw and lip; or, if more developed, is still applied to offices connected with procuring food. Thus we have a muzzle or snout rather than a face. In man, on the contrary, the animal organs, the jaws, and teeth are reduced in size, and covered from view; hence the mouth is extremely small, and neither used, nor capable of use, in directly taking or seizing the aliment. The chin, lips, cheeks, bridge of the nose, eyelids, and eyebrows, receive a fulness of development, and free play of action, which are seen in no other animal. The constant motions of this finely-formed countenance correspond with the inward workings and emotions, and are a most important medium of influence and communication with our fellow-creatures;—inviting and attracting them by its expansion in love, friendship, affection, and benevolent feelings; warning and repelling by its fearful contraction in indignation, scorn, hatred, malice. When to the human face we add the ample and capacious forehead, the organization of the intellectual and moral being is perfect; the contrast with all others, even of the manlike class, pointed and complete. How admirably do the positions of the face, in the erect attitude of man, and the prone posture of brutes, correspond to these striking differences in construction!"

The method of Camper, for the measurement of the characteristics of species, has not attained the importance which its inventor anticipated. The varying position of the jaws and of the ear renders it difficult of application, and the size of the frontal sinus—a hollow brainless protrusion of bone in the forehead of some animals—throws a degree of uncertainty over its inductions. Other methods of comparison have been adopted, such as the vertical configuration of the skull, by Blumenbach, and the weight and capacity of the cranium by others; but it is unnecessary to dwell upon these. I have alluded to the facial angle mainly because it has been used to give a scientific air to a vulgar prejudice against a portion of the human species who, in this respect, are said to resemble more nearly the Ape than Man, and to constitute a grade between the two. According to Camper, the facial angle measures fifty-eight degrees in the young Orang, seventy in the young Negro, and eighty degrees

in the European. Cuvier, by a slightly different measurement, made the facial angle sixty-seven degrees in the young Orang, seventy degrees in the adult Negro, eighty-five degrees in the adult European, and ninety degrees in the European child. According to these statements it seemed that the Negro was but little removed from the Orang, and formed an intermediate step in a gradation of beings, from the lower to the higher. But there was a grand fallacy in these measurements, which Professor Owen has detected and exposed. The *young* Orang was taken as the standard of comparison; and between the young Orang and the young Negro there is a considerable resemblance. But as the head of the Orang is developed, the cranium recedes and the jaw protrudes until the facial angle is reduced to about one half its original size; while in the Negro the cranium is enlarged and the angle increased by growth. "The young Orang-outang," says Martin, "is remarkable for a well-developed forehead, to which the face bears such a just proportion, and is so situated as to invest the whole with a character and expression closely approaching that of a little Negro; but, as maturity advances, the bones of the face develope amazingly; the jaws shoot forward, acquire prodigious size, and are furnished with large teeth; the forehead flattens and falls back; the cranium, as the face enlarges, gradually assuming a more backward position, and the contour of the whole becoming deteriorated and brutalized."* A mere glance at this difference on a plate, sets the whole matter at rest.

I have stated seventy degrees as the minimum of the facial angle in the skull of the Negro, and eighty-five degrees as its maximum in the European; eighty being more properly the average of the Caucasian race. Some would extend this scale at either extremity; but for this there hardly seems to be adequate authority. But the facial angle of the *adult* troglodyte is only thirty-five degrees, and that of the Orang, or satyr, thirty degrees; the difference, therefore, between these animals and Man is so great, that, as Prichard observes, "the utmost diversity between human races is quite inconsiderable when compared with it."

The history of this subject affords a striking illustration of the manner in which Science—often bold and startling in its announcements, and threatening to overthrow all human belief—rectifies and modifies its decisions by subsequent investigation, and comes into beautiful accord with the revealed word of God.

[B.—P. 6. VARIETIES NOT SPECIES.]

THE following extract from the erudite Archbishop Sumner's "Records of the Creation" will be read with interest in connexion with the question of varieties as related to species:

"It is undeniable that the varieties which spring up and are perpetuated, among inferior animals, are no less numerous or remarkable than those exhibited by the inhabitants of the different corners of the globe. This is a fact familiar to the most common observation. While the inhabitant of a seaport, or crowded city, is surprised by every possible shade of hue in the human complexion, and such varieties of countenances as must naturally result from a difference in the facial angle, varying from eighty-five to seventy degrees, the traveller through the country finds the brute creation exhibiting similar differences, and deviations not less remarkable from the original model. He sees, for instance, in almost every county a prevailing breed of oxen: the red of Devonshire, the white-faced breed of Herefordshire, the hornless breed naturalized from Poland, the stately brown of Yorkshire, the lean and ragged Alderney, the black heifer of the Scottish hills. Among horses there is no less

* Natural History of Mammiferous Animals. By W. C. Linnæus Martin, F.L.S. P. 59. See also Prichard and Hall.

variety; as between the tall and bony draft-horses of Lincolnshire, the Scotch galloway, the Welsh or Shetland pony, and the breed of racers. Again, we find an acknowledged difference in the breed of sheep, as exhibited by the horned breed, that of Leicestershire, the Southdown, and the Welsh, with all the intermediate varieties. Hogs vary no less remarkably in the shape of the head, the length and size of the leg; and one race, which is not uncommon in some parts of England, has the hoof undivided. I do not instance the numerous races of dogs, because, owing to the extraordinary difference among them, some naturalists have controverted Buffon's theory of a single species; though even if that belief is given up, very important deviations will remain to be accounted for. The smaller animals, as fowls, hares, rabbits, &c., afford similar examples of variety, which it is not necessary to notice, except to show that such is the plan which Nature is universally accustomed to follow.

"Now, with regard to the degree of difference, it must be confessed that the species which have been alluded to, exhibit peculiarities no less striking than those of the European or Negro. A series of skulls, from the large head of the wild horse to the short head of the Hungarian breed, or the slender head of the English racer, would form a more remarkable instance of deviation than that procured by the facial angle of Camper, or the zygomatic processes of Blumenbach, in the human race. No difference in the *os calcis*, or *ulna*, between the American and European, is as considerable as that which exists between the comparative length of leg in different breeds of hogs, or the size of the head and legs in proportion to the rest of the body in sheep. The nature of the covering of the animal, whether of the wool among sheep or of the hair in dogs and goats, varies no less than the hair of the human head. And the animals which have been enumerated furnish as remarkable, and, apparently, as arbitrary varieties of color as we find among mankind, from the Albino to the New Zealander or African. The difference, therefore, is not less in degree, and it is the same in kind; it consists in the shape of the skull, in the length of some of the bones, in the hair, and in the color of the skin. Yet the examples alleged have been confined almost to a single kingdom. Take the globe collectively, as in the case of Man, and the bison and buffalo will be added to the varieties of the ox; the Argali and Siberian sheep will be placed in contrast with our domestic breed; the Ceylon horse would be instanced, which is not more than thirty inches high; and, according to the most common opinion, the dog would afford an example of the wolf or jackal in a state of domestication. Perhaps the best general idea of the natural tendency to variety, which is found in all the species of land animals, may be formed from those plates in books of zoology which present a collective view of the separate species; and as the advocates of different species in the human race takes pains to show us the features and complexion most dissimilar to each other in frightful contrast, it is seasonable to employ the same method in order to counteract an erroneous impression."*

[C.—P. 9. HAIR AND COLOR.]

It is a popular notion that the heads of certain races of men, and especially of the negro race, are covered with a growth of wool instead of hair, and that this feature constitutes a distinction of species. The experiments of Mr. Youatt, however, have shown the contrary. It had long been noticed that hair, however crisp and curly, had not the felting property of wool. In endeavoring to ascertain the reason of this difference, by microscopical experiments, Mr. Youatt discovered that the fibre of wool is serrated, its edges resembling the edge of a ribbon, or the teeth of a fine saw; while in hair, though there is sometimes an appearance of scales, there are no tooth-like projections. The differences between wool and hair, according to Mr. Youatt, are as follow:—

* London Edition. Pp. 346-350.

"The fibre of wool is crisped, or curled, the curls increasing according to the fineness and felting property of the wool; and, in addition to this, it is decidedly serrated; whilst hair, though sometimes curled, but in a very limited degree in comparison with wool, has its edge only scaly, or rugose, and never truly serrated; and hence it is that hair, though it will entangle and harle to a certain extent, will not felt into a compact mass."*

Dr. Prichard, who repeated with much care the experiments of Mr. Youatt, remarks as follows:—

"A careful observation, with the aid of the microscope, will convince everybody who makes it, if I am not much mistaken, that the hair of the African is not wool, but merely a curled and twisted hair. I have seen and examined the filaments of hair belonging to different races of men, and have compared them with the filaments of wool from the Southdown sheep, with the assistance of Mr. Estlin, who is skilful and long practised in the use of the microscope, with the aid of glasses magnifying about four hundred times. Hairs of a Negro, of a Mulatto, of Europeans, and of some Abyssinians, sent to me by M. d'Abbadie, the celebrated traveller, were, together with the wool of a Southdown sheep, viewed both as transparent and opaque bodies. The filament of wool had a very rough and irregular surface, though no serrations, distinctly so termed, were perceptible. The hair of the Negro, which was extremely unlike that of wool, and of all the other varieties mentioned, had the appearance of a cylinder with smooth surface; they all appeared more or less filled with a dark coloring matter, which, however, did not entirely destroy their transparency. The coloring matter was apparently much more abundant in the hair of the Negro than in the others. The Abyssinian hair was also very dark, but so far diaphanous that a riband-like band appeared running down through the middle of a cylindriciform tube; and the Mulatto hair resembled the Abyssinian in this respect. The filament of European hair seemed almost entirely transparent; it had the appearance of an empty tube, coated internally with something of a dingy or dusky color, which only prevented it from being quite pellucid. European hair of a light color had the same appearance, but was still less darkened.

"From these observations, I am convinced that the Negro has hair properly so termed, and not wool. One difference between the hair of a Negro and that of an European consists in the more curled and frizzled condition of the former. This, however, is only a difference in the degree of crispation, some European hair being likewise very crisp. Another difference is the greater quantity of coloring matter, or pigment, in the hair of the Negro. It is very probable that this quality is connected with the former, and is its cause, though we cannot determine in what manner one depends upon another; but as these properties vary simultaneously, and are in proportion one to another, we may infer that they do not depend upon independent causes.

"It may be worth while to remark, before we take leave of this subject, that if this cuticular excrescence of the Negro were really not hair, but a fine wool; if it were precisely analogous to the finest wool, still this would by no means prove the Negro to be of a peculiar and separate stock, since we know that some tribes of animals bear wool, while others of the same species are covered with hair. It is true that in some instances this peculiarity depends immediately on climate, and is subject to vary when the climate is changed; but in others it is deeply fixed in the breed, and almost amounts to a permanent variety."†

Dr. J. C. Hall notes two other popular distinctions between hair and wool. One is that "wool falls off altogether in a mass, and leaves the animal bare, while hairs fall off singly, and from time to time;" the other, that "the growing part of the fibre of wool varies in thickness, according to the season, being thicker in proportion to the warmth of the atmosphere, and smallest of all in winter; on the contrary, the filament of hair is generally of uniform thickness, or tapering a little towards a point."‡

* Martin, pp. 157-8.

‡ Preface to Pickering.

† Natural History of Man, third edition, p. 103.

Dr. Lawrence makes the following statements respecting the varieties of hair :

" In the Papuas of New Guinea it is completely frizzled and woolly ; but so much longer than in the Negroes, that when fully dressed out, according to their favorite fashion, it forms a round bush of three feet in diameter, quite eclipsing our most dignified legal and theological wigs.

" Individual cases of red hair occur in the three dark-colored varieties of men ; and the soft white hair of the Albino is occasionally seen in all of them.

" The animal kingdom furnishes us with numerous parallel varieties in the color and texture of the hair, as, for example, in the black sheep, in the black and white horses, in the various hues of cattle ; in the white, black, brown, or spotted rabbits ; all undoubtedly produced from the original gray stock."*

From these considerations, it appears that there are no such marked peculiarities in the structure or the color of the hair of different races as to constitute a distinction of species.

With respect to *color*, Latham makes the following observations, designed to illustrate the effect of moisture and coolness to freshen the complexion, and of moisture and heat to darken it :—

" In Africa, as is well known, a great portion of the population is black-skinned ; and with this black skin other physical characteristics are generally found in conjunction. Thus the hair is either crisp or woolly, the nose depressed, and the lips thick. As we approach Asia these criteria decrease, the Arab being fairer, better-featured, and straighter-haired than the Nubian ; and the Persian more so than the Arab. In Hindostan, however, the color deepens ; and by looking amongst the most moist and alluvial parts of the southern peninsula, we find skins as dark as those of Africa, and hair crisp rather than straight. Besides this, the fine oval contour and regular features of the high-cast Hindus of the North become scarce, whilst the lips get thick, the skin harsh, and the features coarse. Further on, we come to the great peninsula which contains the kingdoms of Ava and Siam, the Indo-Chinese or Transganges peninsula. In many parts of this the population blackens again ; and in the long narrow peninsula of Malacca, a large proportion of the older population has been described as black."†

[D.—P. 14. LANGUAGE.]

The more Language is studied, the more is it seen to be one of the most remarkable characteristics of Man, and one of the strongest marks of the unity of the human race. The title of *voice-dividing* given to Man by Homer and Hesiod is no less significant than that of *tool-handling*, given to him by Franklin. Of the phenomenon of speech Dr. Lawrence observes—

" Man exhibits, by external signs, what passes within him ; he communicates his sentiments by words, and this sign is universal. The savage and the civilized man have the same powers of utterance ; both speak naturally, and are equally understood. It is not owing, as some have imagined, to any defect in their organs, that animals are denied the faculty of speech. The tongue of a monkey is as perfect as that of a man ; Camper asserts that the laryngeal pouch renders it impossible for the orang-outang to speak ; I do not clearly understand how this is ascertained ; but, allowing its truth, there are other monkeys, who have not this pouch, and yet cannot speak.

" Several animals may be taught to pronounce words, and even to repeat sentences ; which proves clearly that the want of speech is not owing to any defect in their organs ; but to make them conceive the ideas, which these words express, is beyond the power of art. They articulate and repeat like an echo or machine.

" Language implies a train of thinking ; and for this reason brute animals are incapable of speech ; for, though their external senses are not inferior to our own, and though we should allow some of them to possess a faint dawning of comparison, reflection, and judgment, it is certain that they are unable to form that association of ideas, in which alone the essence of thought consists.

* Lectures, &c., pp. 211-12.

† Man and his Migrations, p. 71.

"The possession of speech, therefore, corresponds to the more numerous, diversified, and exalted intellectual and moral endowments of Man, and is a necessary aid to their exercise and full development. The ruder faculties and simple feelings of animals do not require such assistance. The natural language of inarticulate sounds, gestures, and actions, suffices for their purposes. The wonderful discovery of alphabetical writing, and the invention of printing, complete the benefits derived from the noble prerogative of speech."

The affinity of languages is referred to in the text as a proof of the unity of the human race. Dr. Wiseman, whose linguistic attainments and philosophical accuracy entitle his opinion on this subject to the highest confidence, remarks,

"That the comparative study of languages has brought into certain relationship many which heretofore had seemed divided in sunder, forming thereof great groups of families, so that nations and tribes covering vast tracts of territory are in this study accounted as only one people; while subsequent researches tend in every instance to diminish the number of independent languages, to widen the pale of their larger provinces, and to bring the number of original stocks much nearer to what might be supposed to have arisen in a sudden, among the few inhabitants of the earlier world. . . . Languages gradually forming themselves into groups, and those groups daily tending to approximate and claim mutual relationship, assuredly afford the best proof of a former point of departure, and serve to divide the human race into certain great characteristic families, whose further subdivision enters the province of history. Like those grouped but disunited masses which geologists consider as the ruins of former mountains, we see in the various dialects of the globe the wrecks of a vast monument belonging to the ancient world. The nice exactness of their tallies in many parts, the veins of similar appearance which may be traced from one to the other, show that they have been once connected so as to form a whole; which the boldness and roughness of outline at the points of separation prove that it is no gradual dissolution, no silent action which hath divided, but some violent convulsion which hath riven them in sunder."*

Even Herder, who pronounces the history of Babel "a poetical fragment, in the Oriental style," asserts, that "from the examination of languages, the separation among mankind is shown to have been violent; not indeed that they voluntarily changed their language, but they were rudely and suddenly divided from one another."

The language, or rather languages of the Micronesians, have a strong infusion of Malay words. This is apparent from the comparative vocabularies compiled by Mr. Horatio Hale, the able Philologist of the United States Exploring Expedition. The report of Mr. Hale, forming vol. VII. of the narrative of the Expedition, contains much valuable and well-digested information respecting the Micronesians, and exhibits, under various aspects, their Malaysian affinities.

Latham unhesitatingly connects these islands with the Malayan peninsula, by the affinities of language. He says:

"As the languages, both of Polynesia and Micronesia, differ from each other far less than those of New Guinea, the Papuan Islands, and Australia, the separation from the parent stock is later. It is, most probably, through the Philippines that this third line [of migration] converges towards the original and continental source of all three. This is the South-eastern portion of the Asiatic Continent, or the Indo-Chinese Peninsula."†

Marsden, in his "History of Sumatra," observes that,

"Besides the Malayan there are a variety of languages spoken in Sumatra, which

* Science and Religion, vol. i., pp. 67 and 115.

† Man and his Migrations, p. 128.

however have not only a manifest affinity among themselves, but also to that general language which is found to prevail in, and be indigenous to, all the islands of the eastern sea, from Madagascar to the remotest of Captain Cooke's discoveries; comprehending a wider extent than the Roman or any other tongue has yet boasted. In different places it has been more or less mixed and corrupted, but between the most dissimilar branches an evident sameness of many radical words is apparent, and in some, very distant from each other in point of situation, as for instance the Philippines and Madagascar, the deviation of the words is scarcely more than is observed in the dialects of neighbouring provinces in the same kingdom."*

[E.—P. 36. THE CORAL ISLANDS.]

A friend has suggested to me that the new mission to which Dr. Gulick is appointed, instead of being called by the limited title of "Caroline," or the learned title of "Micronesian," should be popularly designated THE CORAL ISLANDS MISSION. The suggestion is a good one. The South Pacific is studded with myriads of coral islands, which are as yet but little known, even to the physical geographer and the naturalist, and which present to the missionary a new and inviting field. The structure and the surface of these islands is peculiar and varied. Darwin thus describes the first appearance of the rings of coral land, sometimes called Lagoon islands:—

"A long and brilliantly-white beach is capped by a margin of green vegetation; and the strip, looking either way, rapidly narrows away in the distance, and sinks beneath the horizon. From the mast-head a wide expanse of smooth water can be seen within the ring."†

The nearer view of one of these islands is represented as follows:—

"The ring-formed reef of the lagoon-island is surmounted in the greater part of its length by linear islets. On the northern or leeward side there is an opening through which vessels can pass to the anchorage within. On entering, the scene was very curious and rather pretty; its beauty, however, entirely depended on the brilliancy of the surrounding colors. The shallow, clear, and still water of the lagoon, resting in its greater part on white sand, is, when illumined by a vertical sun, of the most vivid green. This brilliant expanse, several miles in width, is on all sides divided, either by a line of snow-white breakers from the dark heaving waters of the ocean, or from the blue vault of heaven by the strips of land, crowned by the level tops of the cocoa-nut trees. As a white cloud here and there affords a pleasing contrast with the azure sky, so in the lagoon, bands of living coral darken the emerald green water."‡

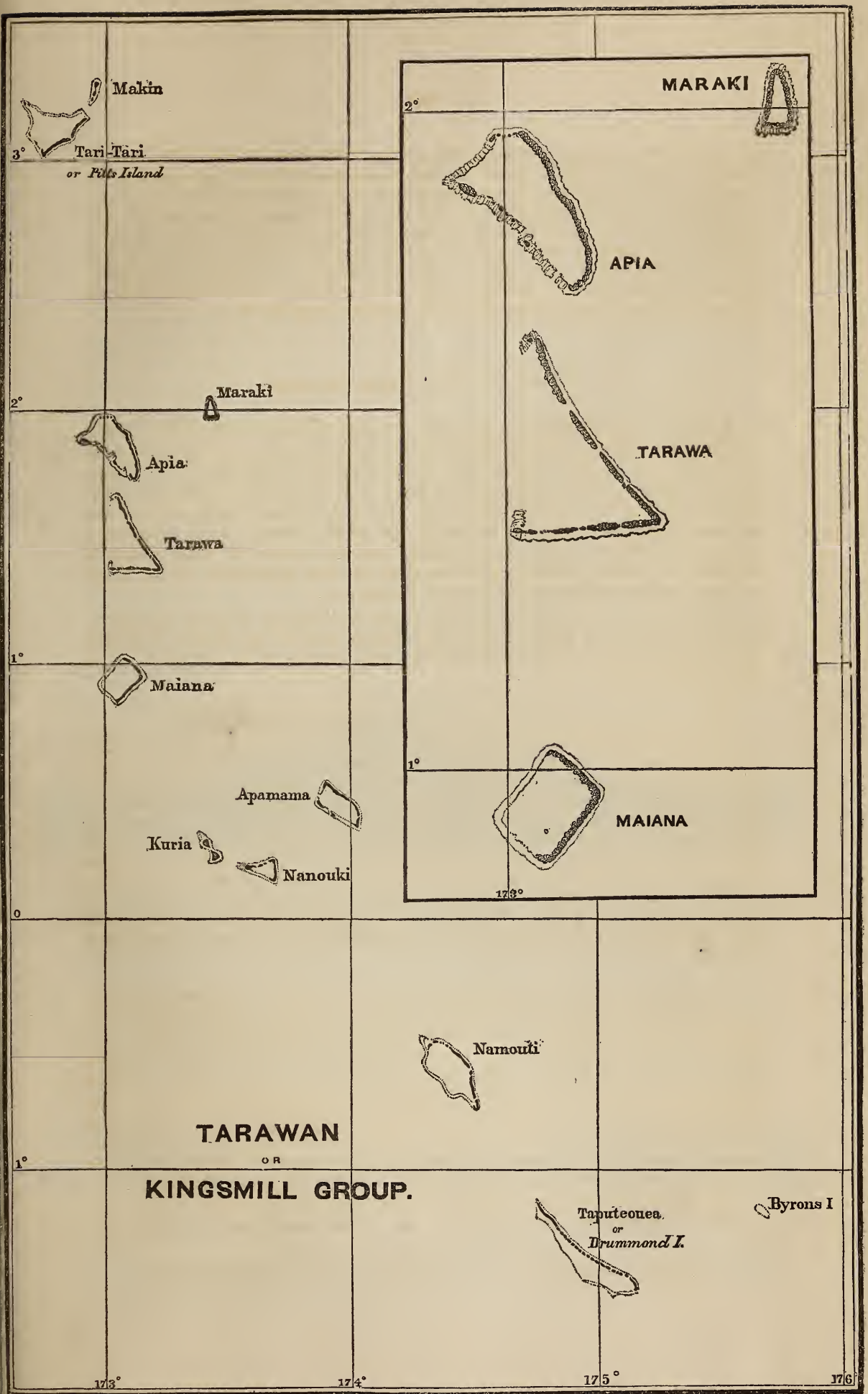
The theory of Darwin respecting the formation of coral reefs and islands is one of much interest to the geologist. It is, however, to Prof. James D. Dana, of Yale College, that we are indebted for the most lucid, complete, and satisfactory description of these islands, as well as for a new and beautiful theory of their formation. His Geological Report of the United States Exploring Expedition is highly appreciated by scientific readers; and the republication of it in the "Journal of Science" has brought it within the reach of a numerous circle to which it was before inaccessible. By his kind permission several extracts from that Report are here inserted, together with the neat maps and illustrations that accompany it in the "Journal of Science."

The plate on the opposite page is a map of the Kingsmill Group, one of the prominent groups of Micronesia. The boundaries of Micronesia

* Quoted by Wiseman, p. 47.

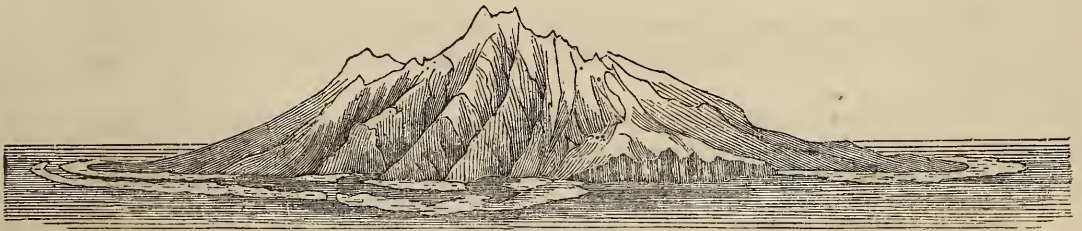
† "Journal," &c. vol. ii. p. 177, Harper's edition.

‡ P. 243.



are so accurately described in Rev. Dr. Pomroy's Charge, that it is unnecessary to recapitulate here the leading divisions of Oceanica. The object of this note is simply to convey a definite idea of the structure and appearance of these islands. It will be seen that the islands are very irregular in shape and size; they often consist of a series of islets along a line of coral reef, which have emerged a few feet above the ocean, and are clothed with verdure. The following is Prof. Dana's description of coral reefs and islands:—

"Coral Reefs.—A wide platform of rock covered with the sea except at low tide, borders most of the high islands of the Pacific. It is a vast accumulation of coral, based upon the bottom in the shallow waters of the shores. This bank or table of coral rock, is of varying width, from a few hundred feet to a mile or more; and although the surface is usually nearly flat, it is often intersected by irregular boat channels, or occasionally encloses large bays, affording harbor protection to scores of ships. In very many instances the reef stands at a distance from the shores like an artificial mole, leaving a wide and deep channel between it and the land; and within this channel are other coral reefs, some in scattered patches, and others attached to the shore. The inner reef in these cases is distinguished as the *fringing* reef, and the outer as the *barrier* reef. The sea rolls in heavy surges against the outer margin of the barrier; but the still waters of a lake prevail within, affording safe navigation for the tottling canoe sometimes through the whole circuit of an island: and not unfrequently, ships may pass, as by an internal canal, from harbor to harbor around the island. The reef is covered by the sea at high tide, yet the smoother waters indicate its extent, and a line of breakers its outline. Occasionally a green island rises from the reef, and in some instances, a grove of palms stretches along the barrier for miles, where the action of the sea has raised the coral structure above the waves.



The sketch annexed conveys some idea of the peculiar features presented by a Pacific island and its encircling reefs, though in order to fill out the scene, the jagged heights and deep gorges of the islands should be covered with forests, and the shores with groves and native villages. The coral platform which borders the shore is represented with its usual uneven line, its broad harbors with a narrow entrance,—and to the left an irregular ship channel running between the inner or fringing reef, and the outer or barrier. At a single place the sea is faced by a cliff; and here, owing to the boldness of the shores and depth of waters, the reef is wanting. To the right there is only a fringing reef.

Coral Islands.—Coral islands resemble the reefs just described, except that a lake or lagoon is encircled instead of a mountainous island. A narrow rim of coral reef,



generally but a few hundred yards wide, stretches around the enclosed waters. In some parts it is so low that the waves are still dashing over it into the lagoon; and in others it is still verdant with the rich foliage of the tropics. The coral-made land when highest is seldom elevated above eight or ten feet above high tide.

" When first seen from the deck of a vessel, only a series of dark points is descried just above the horizon. Shortly after, the points enlarge into the plumed tops of cocoa-nut trees, and a line of green, interrupted at intervals, is traced along the water's surface. Approaching still nearer, the lake and its belt of verdure are spread out before the eye, and a scene of more interest can scarcely be imagined. The surf beating loud and heavy along the margin of the reef, presents a strange contrast to the prospect beyond,—the white coral beach, the massy foliage of the grove, and the embosomed lake with its tiny islets. The color of the lagoon water is often as blue as the ocean, although but fifteen or twenty fathoms deep; yet shades of green and yellow are intermingled, where patches of sand or coral-knolls are near the surface; and the green is a delicate apple shade, quite unlike the usual muddy tint of shallow waters.

" The belt of verdure, though sometimes continuous around the lagoon, is usually broken in some parts into islets which are separated by varying intervals of bare reef; and through one or more of these intervals, a ship-channel occasionally opens into the lagoon. The larger coral islands are thus a string of islands arranged along a line of coral reef. The king of the Maldives bears the high-sounding title of " Ibrahim Sultan King of the Thirteen Atollons and Twelve-Thousand Isles;" which Capt. W. F. W. Owen, R.N., remarks, is no exaggeration.

" The usual features of these islands are presented in the above sketch. The narrow belt is seen to consist of several patches of vegetation; and within are the quiet waters which offer a retreat for vessels wherever there is an opening to the lagoon.

" A few small coral islands are simple reefs without lagoons. In some cases they are bare banks of coral; but generally, the usual vegetation of the islands has obtained a foothold, and affords some protection against the glare of the coral sand."

The coral reefs are of great variety; sometimes they directly adjoin the shores of an island, sometimes they are separated from it by an open channel.

" While there are only narrow shore-reefs to many islands, around others a distant barrier extends, like an artificial mole, sometimes ten or even fifteen miles from the land, and enclosing not only one, but at times several islands. Between the narrow fringing platform and these remote barriers there is every possible variation as to extent and relative position. The inner channel is sometimes barely deep enough at low tide for canoes, or for long distances may be wanting entirely. Then again, it is a narrow intricate passage, obstructed by knolls or patches of coral, rendering the navigation quite dangerous. Again, it is for miles in length an open sea, in which ships find room to beat against a head wind with a depth of twenty, thirty, or even fifty fathoms. Yet hidden reefs make caution necessary. Patches from a few square feet to many square miles in extent are met with over the broad area enclosed by these distant barriers."

* * * * *

" A wide difference in the extent of reefs would be inferred from these facts. There is the mere point of coral rock; and again, as for example, west of the two large Feejee islands, there may be three thousand square miles of continuous reef-ground, occupied with coral patches and intermediate channels or seas. The inclosing barrier off Vanua Levu alone is more than one hundred miles long. The Exploring Isles, in the eastern part of the Feejee group, have a barrier eighty miles in circuit. New Caledonia, as often cited, has a reef along its whole western shores, a distance of two hundred and fifty miles, and it extends one hundred and fifty miles further north, adding thus much to the length of the island. The great Australian barrier forms a broken line, a thousand miles in length, lying off the coast from the Northern Cape to the tropical circle; and the channel within is in some parts sixty miles from the coast, with a depth of thirty to sixty fathoms.

" The seas outside of the lines of coral reef are often unfathomable within a short distance of the line of breakers."

Respecting the outer reefs, Prof. Dana observes:

"It is rare to meet with any corals in this reef-rock retaining the original position of growth. It is at once apparent, that the rock consists of the debris of the coral fields, consolidated by a calcareous cement; and the greater abundance of the finer variety of rock indicates that much of it has originated from coral sand or mud."

The inner reefs, on the contrary, seldom present

"Any large accumulation of coral debris. The margin is generally less abrupt; yet there is every variety, from the gradually sloping bed of corals to the bluff declivity with its clinging clumps. In different parts, there are many portions still under water at the lowest tides; and here (as well as upon the outer banks), fine fishing sport is afforded the natives, who wade out at ebb tide with spears, pronged sticks, and nets, to supply themselves with food. The lover of the marvellous may find abundant gratification by joining in such a ramble; among coral plants and flowers, with fishes of fantastic colors, starfish, echini, and myriads of other beings which science alone has named, fit inhabitants of a coral world, there is on every side occasion for surprise and admiration."

The channels among the reefs are sometimes two or three hundred miles in length, from thirty to sixty miles in width, and as many fathoms in depth; in other cases the channel is narrow.

"The island of Tahiti on its northern side presents us with a good illustration of a narrow channel, and at the same time exhibits the usual broken or interrupted character of reefs. This is seen in the following cut, in which the reefs, both fringing



and barrier, are the parts enclosed by dotted lines. The outer reef extends half to two-thirds of a mile from the shore. Within it, between Papieti and Matavia, there is an irregular ship channel, varying from three to twenty fathoms in depth. Occasionally it enlarges into harbors; and in other parts it is very intricate, though throughout navigable by large vessels. The island of Upolu, of the Samoan Group, is bordered by a reef nearly a mile wide on part of its northern shore; but the waters within are too shallow for a canoe at low tide; and therefore, notwithstanding its extent, the reef is rather a fringing than a barrier reef."

The shore accumulations upon some islands greatly enhance their value as places of residence.

"The wide coral banks and the enclosed channels greatly enlarge the limits tributary to the islands they encircle. They afford extensive fishing grounds for the natives, and internal waters, which enable them to practise and improve their skill in navigation, and communicate without danger between distant settlements; and the effect is evident in the spirit of maritime enterprise which characterizes the islanders: for these circumstances have favored the construction of large sail canoes, in which they venture beyond their own land, and often undertake voyages hundreds of miles in length. Instead of a rock-bound coast, harborless and thinly habitable, like most extra-tropical islands, the shores are blooming to the very edge, and wide plains are spread out with breadfruit and other tropical productions. Ports, safe for scores of vessels, are also opened by the same means, and some islands number a dozen, when the unprotected shores would have hardly offered a single good anchorage."

The general features of a Coral Island are thus described:—

"A barrier reef, and a lagoon enclosed by it, are the prominent features of a coral island; yet there are a few of small size in which the lagoon is wanting. In the larger islands, the waters within look like the ocean, and are similarly roughened by the wind, though not to the same extent. Standing on the north shore of the Raraka lagoon (in the Paumotu), and looking south-west, nothing is described but blue waters;—far in the distance, to the right or left, a few faint dots are distinguished; and as the eye sweeps around, these gradually enlarge their lines of palms and other verdure, which finally become distinct groves on nearing the observer. At Dean's Island, another of the Paumotu, and at many of the Carolines, the resemblance to the ocean is still more striking. The lagoon is in fact but a fragment of the ocean cut off by more or less perfect walls of coral reef-rock; and the reef is here and there surmounted by verdure, forming a series of islets.

"In many of the smaller coral islands, the lagoon has lost its ocean character, and become a shallow lake, and the green islets of the margin have coalesced in some instances into a continuous line of foliage. Traces may perhaps be still detected of the passage or passages over which the sea once communicated with the internal waters, though mostly concealed by the trees and shrubbery which have spread around and completed the belt of verdure. The coral island is now in its most finished state: the lake rests quietly in its bed of palms, hardly ruffled by the storms that madden the surrounding ocean."

The following figures present an accurate view of several coral islands in the Pacific. They are reduced from the maps of the Expedition to a scale of four-tenths of an inch to a mile.

1.



TAIARA.

2.



HENUAKE, OR HONDEN.

"*Taiara* and *Henuake* (figs. 1 and 2), are two small belts of foliage, somewhat similar to *Maraki*. *Henuake* possessed an additional charm in being tenanted only by birds; and they were so tame that we took them from the trees as if they had been their flowers.

"*Swain's* and *Jarvis* Islands (figs. 3 and 4) are of still smaller size, and have no lagoon. The former is densely covered with foliage, while the surface of the latter is sandy. *Swain's* Island is a little depressed about the centre, a fact indicating that there was formerly a lagoon.

"*Fakaafo*, or *Bowditch* (fig. 5), 200 miles north of Samoa, is the type of a large part of coral islands. The bank of reef has only here and there emerged from the waves and become verdant; in other portions the reef is of the usual height,—that is, near low-tide level,—excepting a few spots elevated a little by the accumulation of sand.

"The *Paumotu* Archipelago, the crowded cluster of coral islands just northeast of Tahiti, is a most instructive study for the reader; and a map of these islands by the Expedition, inserted in the Narrative of the Expedition, and also in the Hydrographical Atlas, will well repay close study. Sailing among these islands—over eighty in number, only four of which are over twelve feet high, exclusive of the vegetation—two or three are almost constantly in sight from the mast-head.

"The small amount of habitable land on these reef-islands is one of their most peculiar features. Nearly the whole surface is water; and the land around the lagoon is but a narrow rim, the greater part of which is usually under water at high tide."



SWAIN'S ISLAND.



JARVIS ISLAND.



FAKAAFO.

Of ten islands, having an aggregate area of 1952 square miles, the amount of actual dry habitable land is but seventy-six miles, or less than one twenty-fourth. In the Caroline Archipelago the proportion of land is still smaller.

"Sections of coral islands and their lagoons have been given by Captain Beechey and Mr. Darwin. We add another, by way of illustration, although little may be presented that is novel after the excellent descriptions of these authors. Sketches of several of these islands, showing the general relation of the rim of land to the reef and the lagoon within, are given in the plate of the Kingsmill Group. The following sketch represents a section of the rim of land from the sea on one side (the left), to the lagoon on the other. In the view, the part *ma* represents the shallow sea bordering an island, and abruptly deepening one to six hundred feet from the line of breakers. In these shallow waters are the growing corals; yet, as before stated, a large part is barren sand or coral rock.

"From *a* to *b* is the shore platform of reef-rock, nearly at low tide level, with the margin (*a*) slightly elevated, and much incrustated at the top with Nullipores. From the platform there is a rise by a steep beach (*b c*), of six or eight feet, to the wooded part of the coral belt represented between *c* and *d*. From *d* to *e* there is a gently sloping beach bordering the lagoon. Beyond *e* the waters of the lagoon at first deepen gradually, and then fall off more or less abruptly.

"In the *Paumotu*s, the shore platform, the steep beach, and the more gently sloping shore of the lagoon are almost constant characteristics.

"The width of the whole rim of land, when the island gives no evidence of late elevation, varies from three hundred yards to one-third of a mile, excepting certain prominent points, more exposed to the united action of winds and waves, and from opposite directions, which occasionally exceed half a mile."

The cut exhibits a section of an outer-reef, as it appears when raised above the waters, and covered with vegetation.

Professor Dana observes, that the mind experiences some disappointment in a first view of coral reefs:—

"Nature does not make green-houses, but distributes widely her beauties, and leaves it for man to gather into gardens the choicer varieties. Yet there are scenes in the coral landscape, which justify the brightest coloring of the poet; where coral shrubbery and living flowers are mingled in profusion; where *Astræa* domes appear like the gemmed temples of the coral world, and *Madrepore* vases, the decorations of the groves; and as the forests and flowers of land have their birds and butterflies, so

— Life in rare and beautiful forms
Is sporting amid those bowers of stone,"

for fish of various hues, red, blue, purple, green, and other brilliant shades, keep constant play, appearing and disappearing among the branches.

"These fields of growing coral spread over submarine lands, such as the shores of islands and continents, where the depth is not greater than their habits require, just as vegetation extends itself through regions that are congenial. The germ or ovule, which, when first produced, swims free, finds afterwards a point of rock or dead coral to plant itself upon, and thence springs the tree, or some other form of coral growth.

"The analogy to vegetation does not stop here. It is well known that the debris of the forest, decaying leaves and stems, and animal remains, add to the soil; and that accumulations of this kind are ceaselessly in progress: that by this means, in the luxuriant swamp, deep beds of peaty earth are formed. So is it in the coral mead. Accumulations of fragments and sands from the coral zoophytes, and of shells and other relics of organic life, are in constant progress; and thus a bed of coral debris is formed and compacted. There is this difference, that a large part of the vegetable material consists of elements which escape as gases on

decomposition, whereas coral is itself an enduring rock-material, undergoing no change except the mechanical one of comminution. The animal portion is but a mere fraction of the whole zoophyte.

"In these few hints, we have the whole theory of reef-making: not a speculative opinion, but a legitimate deduction from a few simple facts, and bearing close analogy to operations on land. The coral debris and shells fill up the intervals between the coral patches, and the cavities among the living tufts, and in this manner produce the reef deposit, which is finally consolidated while still beneath the water."

A few remarks upon the structure, growth, and habits of coral zoophytes will be interesting and appropriate in this place. How are these wonderful



structures of the ocean reared? For the sake of the figure, I have presented in the discourse the current view that these piles of rock are built up mechanically by the polyps. In truth, however, the polyp does not build mechanically, but grows by secretion. On this point the remarks by Prof. Dana are altogether conclusive:—

"It is not more surprising nor a matter of more difficult comprehension that the polyp should form coral, than that the quadruped should form its bones, or the mollusc its shell. The processes are similar, and so the result: in each case it is a simple animal secretion, a formation of stony matter from the aliment which the animal receives, produced by certain parts of the animal fitted for this secreting process. This power of secretion is the first and most common of those that belong to living tissues: and though differing in different organs according to their end or function, it is all one process, both in nature or cause, whether in the animalcule or in man. Coral is never, therefore, an agglutination of grains made by the handywork of the many-armed polyps: for it is no more an act of labor than bone-making in ourselves. And again, it is not a collection of cells into which the coral animals may withdraw for concealment, any more than the skeleton of a dog to its house or cell: for every part of the coral of a polyp in most reef-making species is enclosed *within* the polyp, where it was formed by the secreting process.

"*Structure of Coral Animals or Polyps.*—A good idea of a coral polyp may be had from comparison with the garden aster: for the likeness in external form and delicacy of coloring is singularly close. The aster consists of a tinted disk bordered with one or more series of petals; and in exact analogy, the polyp-flower, in its most common form, has a disk often richly colored, fringed around with petal-like organs called tentacles. Below the disk, in contrast with the slender pedicel of the plant, there is a stout cylindrical pedicel or body, often as broad as the disk itself, and usually not much longer, which contains the *stomach* and internal cavity of the polyp: and the *mouth*, which opens into the stomach, is placed at the centre of the disk. Here, then, the flower-animal and the garden-flower diverge in character, the difference being required by the different modes of nutrition in the two kingdoms of nature.

* * * * *

"The Actiniae are entirely fleshy, and usually live attached by their lower extremity to the submerged rocks of the shores. The mouth, at the centre of the flower-like disk forming the summit of the animal, is a simple opening without teeth or appendages of any kind. The tentacles—the petals of the flower—are tubular organs, and communicate internally with the interior cavity of the animal. The animal contracts, when disturbed, and conceals the flower by rolling inward over it the margin bearing the tentacles; and in this state it seems like a lifeless lump of animal matter. Left quiet for a while, it again expands and appears as before. This expansion is produced by receiving water into the interior from without, mostly through the mouth, and thus filling the tentacles and swelling out its fleshy body. They are generally found expanded with the mouth wide open to receive their prey. As they are fixed to the rocks, they must wait for their food to come to them. When a crab, shell-fish, or anything alive, within the capabilities of their bodies, comes within reach, they usually secure it by closing upon the victim the tentacles (which commonly have a stinging power), and pushing it into the mouth. In many species the tentacles are too short to aid in capturing food except it be by stinging. These organs subserve also the purpose of aerating the blood, a function in which all parts of the body are more or less concerned.

"One of the most singular peculiarities of polyps is their ready restoration of a lost part. Even a fragment will go on to complete the entire animal again; as with the fabled hydra of old, the knife is used but to multiply, for every section becomes a new animal.

* * * * *

"The breaking of a branch is no serious injury to a zoophyte. There is often some degree of sensibility apparent throughout the clump, even when of considerable size, and the shock, therefore, may occasion the polyps to close. But in an hour, or perhaps much less time, their tentacles will have again expanded; and such as were

torn by the fracture will be in the process of complete restoration to their former size and powers. The fragment broken off, dropping in a favorable place, would become the germ of another coral plant, its base cementing by means of coral-secretions to the rock on which it might rest; or if still in contact with any part of the parent tree, it would be reunited and continue to grow as before. The coral zoophyte may be levelled by transported masses swept over by the waves; yet like the trodden sod, it sprouts again, and continues to grow and flourish as before. The sod, however, has roots which are still unhurt; while the zoophyte, which may be dead at base, has a root—a source or centre of life—in every polyp that blossoms over its surface. Each animal might live and grow if separated from the rest, and would ultimately produce a mature zoophyte.”

This circumstance will help to explain the almost incredible fact that such immense accumulations are the work of an animal so insignificant. On this point Professor Dana observes:—

“Such accumulations of calcareous rock may appear to be an incredible work for the coral polyp, but only so, because we are not accustomed to contemplate the results which may proceed from the smallest agencies long continued. The operatives in the inorganic world are invisible molecules; and among living organisms, it is the lowest grade, the minims of existence, that have accomplished the grandest results in the earth’s history.

* * * * *

“There is sufficient means provided for the production of coral material for islands, however numerous. These humble ministers of creative power might, without other attributes than those they now possess, have laid the foundations of continents and covered them with mountain ranges. This remark requires no limitation if we allow the requisite time, and connect with the power of growth such other agencies as have been at work in the Pacific since the reefs were there in progress.”

Respecting the permanence of those wonderful insect-works, he remarks that:—

“The structure built amid the waves will necessarily have the form and condition best fitted for withstanding their action. The little islet of an atoll is therefore more enduring than hills of harder basaltic rocks. Reefs of zoophytic growth but ‘mock the leaping billows,’ while other lands of the same height gradually yield to the assaults of the ocean. There are cases, however, of wear from the sea, owing to some change of condition in the island, or in the currents about it, in consequence of which, parts once built up are again carried off. Moreover, those devastating seas which overleap the whole land may occasion unusual degradation from some parts. Yet these islets have within themselves the source of their own repair, and are secure from all serious injury.”

Professor Dana gives the following sketch of *The Completed Coral Island*:—

“The coral island in its best condition is but a miserable residence for man. There is poetry in every feature: but the natives find this a poor substitute for the breadfruit and yams of more favored lands. The cocoanut and Pandanus are, in general, the only products of the vegetable kingdom afforded for their sustenance, and fish and crab from the reefs their only animal food. Scanty too is the supply; and infanticide is resorted to in self defence, where but a few years would otherwise overstock the half-a-dozen square miles of which their little world consists.

“Yet there are more comforts than might be expected on a land of so limited extent—without rivers, without hills, in the midst of salt water, with the most elevated point but ten feet above high tide, and no part more than 300 yards from the ocean. Though the soil is light, and the surface often strewn with blocks of coral, there is a dense covering of vegetation to shade the native villages from a tropical sun. The cocoanut, the tree of a thousand uses, grows luxuriantly on the coral-made land, after

it has emerged from the ocean ; and the scanty dresses of the natives, their drinking vessels, and other utensils, mats, cordage, fishing-lines, and oil, besides food, drink, and building material, are all supplied from it. The Pandanus, or screw-pine, flourishes well, and is exactly fitted for such regions : as it enlarges and spreads its branches, one prop after another grows from the trunk and plants itself in the ground ; and by this means its base is widened, and the growing tree supported. The fruit, a large ovoidal mass made up of oblong dry seed, diverging from a centre, each near two cubic inches in size, affords a sweetish husky article of food, which, though little better than prepared corn stalks, admits of being stored away for use when other things fail. The extensive reefs abound in fish which are easily captured, and the natives, with wooden hooks, often bring in larger kinds from the deep waters. From such resources a population of 10,000 persons is supported on the single island of Taputonea, whose whole habitable area does not exceed six square miles.

" Water is to be found commoſly in ſufficient quantities for the uſe of the natives, although the land is ſo low and flat. They dig wells five to ten feet deep in any part of the dry iſlets, and generally obtain a conſtant ſupply. Theſe wells are ſometimes fenced around with ſpecial care ; and the houſes of the villagers, as at Fakaſo, are often clustered about them. On Aratica (Carlſhoff) there is a watering place 50 feet in diameter, from which our veſſels in a few hours obtained 390 gallons. The Tarawan Iſlands are generally provided with a ſupply ſufficient for bathing, and each native takes his morning bath in freſh water, which is eſteemed by them a great luxury. On Taritari, as Mr. Hale was informed by a Scotch ſailor taken from the iſland, by the name of Gray, there is a long trench or canal, deſcribed by him as ſeveral miles long, and two feet deep. They have *taro* plantations, which require a large ſupply of water, beſides ſome breadfruit. Theſe iſlands have been elevated a little, but are not over fifteen feet above the ſea.

" The only ſource of this water is the rains, which, percolating through the looſe ſurface, ſettle upon the hardened coral rock that forms the baſis of the iſland. As the ſoil is white or nearly ſo, it receives heat but ſlowly, and there is conſequently but little evaporation of the water that is once abſorbed.

" Theſe iſlands moreover encloſe ports of great extent, many admitting even the laſt claſs of veſſels : and the ſame lagoons are the pearl fisheries of the Pacific.

" An occaſional log drifts to their ſhores, and at ſome of the more iſolated atolls, where the natives are ignorant of any land but the ſpot they inhabit, they are deemed direct gifts from a propitiated deity.

" The language of the natives indicates their poverty, as well as the limited productions and unvarying features of the land. All words like thoſe for mountain, hill, river, and many of the implements of their anceſtors, as well as the trees and other vegetation of the land from which they are derived, are loſt to them, and as words are but ſigns for ideas, they have fallen off in general intelligence. It would be an intereſting inquiry for the philoſopher, to what extent a race of men placed in ſuch circumſtances are capable of mental improvement. Perhaps the query might be beſt answered by another, How many of the various arts of civilized life could exiſt in a land, where ſhells are the only cutting inſtruments,—the plants in all but twenty-nine in number,—but a ſingle mineral,—quadrupeds none, with the exception of foreign mice,—freſh water barely enough for houſehold purpoſes,—no ſtreams, nor mountains, nor hills ? How much of the poetry or literature of Europe would be intelligible to perſons whoſe ideas had expanded only to the limits of a coral iſland ;—who had never conceived of a ſurface of land above half a mile in breadth,—of a ſlope higher than a beach,—of a change of ſeaſons beyond a variation in the prevalence of rains ? What elevation in morals ſhould be expected upon a contracted iſlet, ſo readily over-peopled that threatened ſtarvation drives to infanticide, and tends to cultivate the extremeſt ſelfiſhneſs ? Aſſuredly there is not a more unfavorable ſpot for moral or intellectual development in the wide world than the coral iſland, with all its beauty of grove and lake.

Theſe iſlands are expoſed to earthquakes and ſtorms like the continents, and

occasionally a devastating wave sweeps across the land. During the heavier gales, the natives sometimes secure their houses by tying them to the cocoanut trees, or to a stake planted for the purpose. A height of ten or twelve feet, the elevation of their land, is easily overtopped by the more violent seas; and great damage is sometimes experienced. The still more extensive earthquake-waves, such as those which have swept up the coast of Spain, Peru, and the Sandwich Islands, would produce a complete deluge over these islands. We were informed by both Gray and Kirby, that effects of this kind had been experienced at the Tarawan Islands; but the statements were too indefinite to determine whether the results should be attributed to storms or to this more violent cause."

To these beautiful and interesting islands, where the gospel has never yet been preached, our brother Gulick is destined. It is hoped that this sketch of the field will contribute to awaken an interest in it in the minds of Christians.

The brief sketch of the inhabitants of the Coral Islands given in the discourse was derived principally from the admirable report of Mr. Hale. It would have been made more complete, had I not anticipated something similar from the pen of Dr. Pomroy. All that the reader can desire to know of the inhabitants of these isles will be found in his lucid sketch. I will conclude this note, therefore, with a brief notice of the probable origin of this population.

Pickering traces them to the East Indies. There is evidence, that before the time of Columbus, "Polynesians were accustomed to undertake sea voyages, nearly as long, exposed to equal danger, and in vessels of far inferior construction."

Latham regards the line of migration as that "where the continuity of successive islands is the greatest, and wherever the fewest considerable interspaces of ocean are to be found. This is an *a priori* view, subject to modification from the counterbalancing phenomena of winds, or currents unfavorable to the supposed migration." But these interfering causes have determined him "to consider the Micronesian Archipelago as that part of Polynesia which is the part most likely to have been first peopled."*

The same writer observes that

"A distribution over continents is one thing, a distribution over islands another. The first is easier made when the world is young, and when the previous occupants create no obstacles. The second implies maritime skill and enterprise, and maritime skill improves with the experience of mankind. One of the greatest facts of ethnological distribution and dispersion belongs to this class. All the islands of the Pacific are peopled by the members of one stock, or family—the Polynesian. These we find as far north as the Sandwich Islands, as far south as New Zealand, and in Easter Island, half-way between Asia and America. So much for the *dispersion*. But this is not all; the *distribution* is as remarkable. Madagascar is an African rather than an Asiatic island; within easy sail of Africa; the exact island for an African population. Yet, ethnologically, it is Asiatic; the same family which we find in Sumatra, Borneo, the Moluccas, the Mariannes, the Carolines, and Polynesia, being Malagasi also.

* * * * *

"But we must remember that true discontinuity can exist in *continents* only. The population of two *islands* may agree, whilst that of a whole archipelago lying between them may differ. Yet this is no discontinuity, since the sea is an unbroken chain, and the intervening obstacle can be sailed round instead of crossed. The nearest way from the continent of Asia to the Tahitian archipelago—the nearest part of Polynesia—is *viâ* New Guinea, New Ireland, and the New Hebrides. All these islands, however, are inhabited by a different division of the Oceanic population. Does this indicate displacement? No. It merely suggests the Philippines, the

Pelews, the Carolines, the Ralik and Radak groups, and the Navigator's Isles, as the route; and such it almost certainly was." *

Mr. M. Mastin mentions a fact that sheds further light upon the probable course of these oceanic migrations.

" Many instances have occurred of the slaves in Mauritius seizing on a canoe, or boat, at night time, and with a calabash of water, and a few manioc, or Cassada roots, pushing out to sea and endeavoring to reach across to Madagascar or Africa, through the pathless and stormy ocean. Of course they generally perish, but some succeed. We picked up a frail canoe within about a hundred miles of the coast of Africa; it contained five runaway slaves, one dying in the bottom of the canoe, and the others nearly exhausted. They had fled from a harsh French master at the Seychelles, committed themselves to the deep without compass or guide, with a small quantity of water and rice, and trusting to their fishing-lines for support. Steering by the stars, they had nearly reached the coast from which they had been kidnapped, when nature sank exhausted, and we were just in time to save four of their lives. So long as the wanderers in search of home were able to do so, the days were numbered in notches on the side of the canoe, and twenty-one were thus marked when met with by our vessel.

It is evident that the Micronesians who now navigate their canoes skilfully and for long distances, by their rude observation of the stars, may have migrated originally from the East Indies to their present home.

Dr. Gulick is going, therefore, to a portion of the human family who, however isolated, were no doubt derived from the Asiatic continent. It is gratifying to know that his own interest in ethnography, and his qualifications as a man of science, will enable him to throw much light on the interesting question of Oceanic Migrations.

* *Man and his Migrations*, pp. 95 and 99.

